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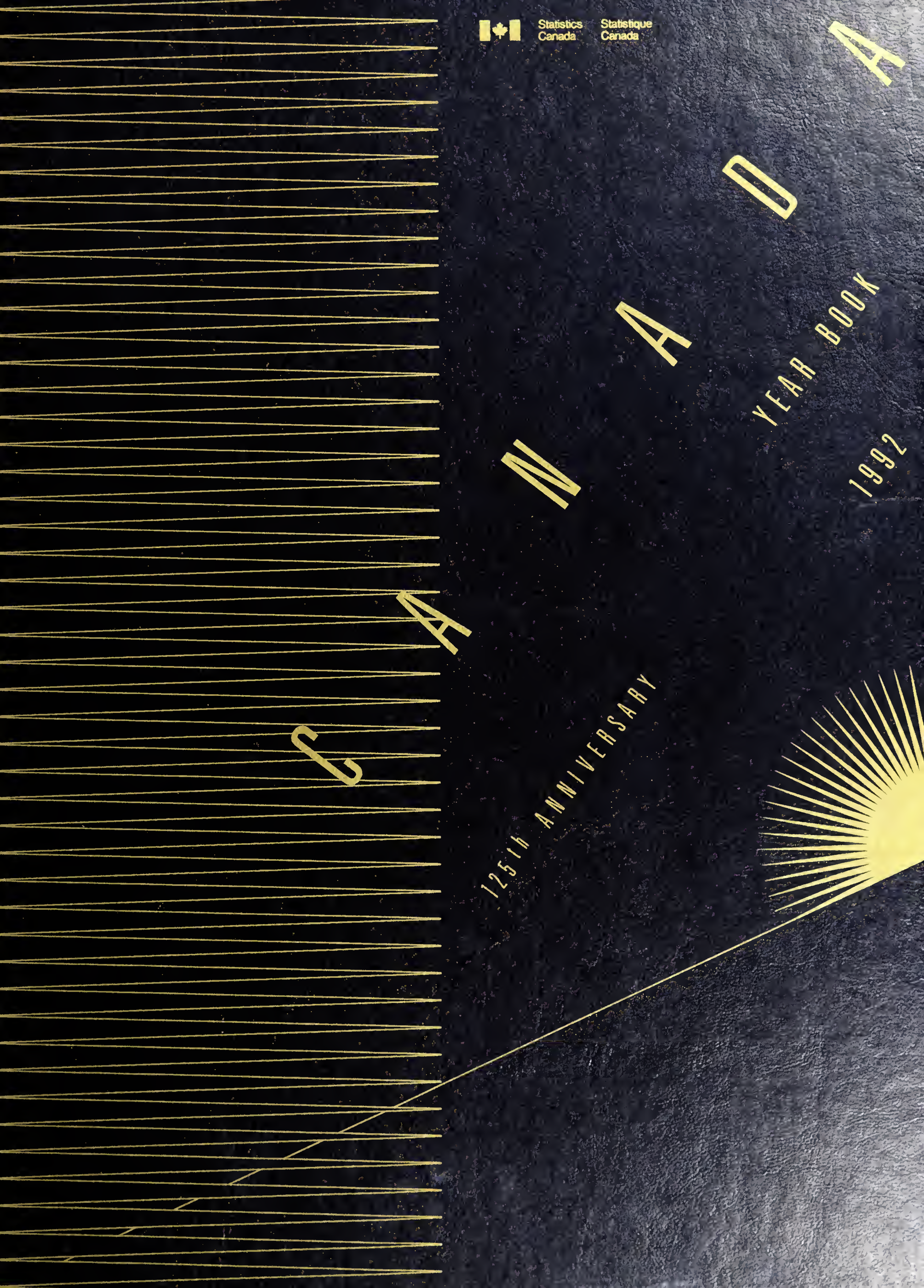

CANADA

YEAR BOOK

1992

125th ANNIVERSARY

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CANADA

YEAR BOOK

1992

125th ANNIVERSARY

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A GREETING FROM THE GOVERNOR GENERAL OF CANADA

Fundamental to the strength of a nation is the knowledge it has of itself. This knowledge of social, economic, political and cultural history enriches the lives of all our citizens and enables our nation's leaders to plan for a better future, to make informed decisions, to conduct the business of the day.

A Year Book is therefore of vital importance. Compiled regularly, it is living testimony to the progress and development of the country, chronicling as it does all aspects of national life.

As Canada celebrates the 125th year of its founding as a nation, it is fitting that its anniversary Year Book be a special commemorative issue that expands its traditional content to give readers a greater measure of the many achievements of this great country.

Indeed, the 1992 celebrations provide all Canadians with an opportunity to reflect on our past, and to look ahead to the future. In any such reflections, it is important to have information, both about the present and the past, since the two are integrally related.

The 1992 Canada Year Book is just such an information source. As the reader will see, it contains comprehensive overviews on all aspects of contemporary Canadian life, along with a rich and colourful review of Canada's many accomplishments. It is indeed a landmark publication for Statistics Canada, an innovative work that can only stimulate both Canadians and members of the international community to increase their understanding of this remarkable country of ours.

THE RIGHT HONOURABLE RAMON HNATYSHYN
GOVERNOR GENERAL OF CANADA

A DEDICATION AND OUR THANKS . . .

Statistics Canada wishes to dedicate the 1992 edition of the Canada Year Book to the millions of Canadians who have responded to our surveys throughout the years. With your help, we are able to provide the kind of up-to-date information necessary for a nation to better know and govern itself. Without your help, reference documents like the 1992 Canada Year Book could not exist.

From all of us at Statistics Canada, our many thanks.

FOREWORD

This special edition of the Canada Year Book celebrates a number of important milestones in Canadian history. First and foremost is the 125th anniversary of Canada's founding as a nation and Statistics Canada is pleased to commemorate this event with the 1992 Canada Year Book.

But in addition, 1992 marks the 125th anniversary of the Year Book itself, which first appeared in 1867, and follows on the 325th anniversary of Canada's first census, taken by Grand Intendant Jean Talon in the colony of New France.

These latter landmarks are of great importance to Statistics Canada and we would also want to signal them as critical milestones in our own work of providing information — work that literally predates Confederation.

Certainly, all these anniversaries provide us with a very fitting opportunity to expand and enrich the contents of the 1992 Canada Year Book.

Thus while we continue our tradition of providing Canada with a comprehensive reference book, we are pleased to introduce a series of ancillary changes. In addition to its larger format and enriched new design, the 1992 Year Book takes on an historical dimension with archival photos and feature articles that highlight Canadian life and Canadian achievement over the last 125 years.

As a compendium — a brief summary of a larger field of knowledge — the 1992 Canada Year Book has gathered and merged information from a great number of sources. It cuts an impressive swath across the many statistics available about Canada. I introduce it to you with enormous pleasure.

IVAN P. FELLEGI
CHIEF STATISTICIAN OF CANADA

ACKNOWLEDGEMENTS

The 1992 Canada Year Book owes its existence to the hard work and commitment of many people. As Editor-in-Chief of the Year Book, I have been privileged to work with a team of professionals in its realization, and on behalf of Statistics Canada, I take great pleasure in thanking the members of this team for their invaluable contributions.

My special thanks go to Jim Reil and Chantal Prévost, who headed the editorial teams for the English and French versions of the Canada Year Book. On these teams were: Denis Bernard, David Blais, Leslie Burtch, Allan Cumyn, Leo Demesmaker, Andrée Hébert, Anne-Marie McElrone, Gordon McMillan, Larissa Pergat and Keane Shore. Margaret Smith provided constant guidance and sharp insights. Special thanks also to Pat Harris for tables and charts, to Sylvie Blais, who headed archival photo research, and to Anita Bédard and Marguerite Cantin for proofreading. Philip Cross and Jean Dumas also provided important advice and help to the editors.

In the realization of a project as complex as the Canada Year Book, success depends also on the strength of the production team. I would like to extend special appreciation to Linda MacDonald and Leslie Burtch for production co-ordination and to Diane Leblanc who heads a team of computer experts: Elaine Brassard, Natacha Cousineau and Chantal Caron.

For design and art direction, special thanks to Jim Power and John MacCraken and to Johanne Beauseigle for co-ordinating technical and composition activities. The design and graphics team, headed by Renée Saumure, included: Roberto Guido, Jean-Marie Lacombe, Jeff Rossiter, Nigel Wilson. The technical team included: Ghislaine DesGagné, Lynne Durocher, Benoît Fontaine, Pierre Groulx, Rachel Mondou, Marc Pelchat. The composition team, headed by Cheryl VanBastelaar, included: Suzanne Beauchamp, Diane Goulet, Monique Légaré, Sue Lineger, Ginette Meilleur, Danielle Soucy-Collin. Printing liaison was handled by Jacques Tessier.

Special thanks also to Alain Mazet of Secretary of State for translation services and to Katherine Bonner, who co-ordinated the marketing activities.

Original designs for both the interior of the Canada Year Book and the cover were provided by Aviva Furman and Neville Smith. Their designs proved to be both innovative and exciting, as the Canada Year Book demonstrates. Another exciting addition to the Year Book is its gallery of Canadian art and special thanks are extended to Daniel Sharp for his thoughtful selection.

Finally, appreciation and thanks are extended to the more than 350 contributors from government departments and various other sectors who provided invaluable information to us. Without their help and advice the Canada Year Book could not exist. On behalf of Statistics Canada, many thanks.

Jonina Wood
Editor-in-Chief
Canada Year Book

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INTRODUCING THE *1992 CANADA YEAR BOOK*

THE *CANADA YEAR BOOK* traces its beginnings to a document privately printed in the year of Confederation, under the title: "Year Book and Almanac of British North America for 1867". In that year the *Year Book* served mostly as a register of political, vital and trade statistics and "public events of interest".

Since then, the *Year Book* has become something of a national institution, serving as a steadfast chronicler of Canada's economic, social and cultural life. For generations, it has been the faithful companion of students, librarians, researchers and all who are interested in knowing more about life in Canada.

Now, on the occasion of the 125th anniversary of Confederation, the *Year Book* appears in an entirely new format, complete with new designs and a much-revised content. Special efforts have been taken to include feature articles and archival photos that offer a more personalized view of Canada's history while recalling some of the nation's many achievements and accomplishments.

In addition, the *1992 Year Book* features a special gallery of selected Canadian art and a new chapter on sports, profiling a selection of artists and athletes who have contributed to Canada's heritage.

Most importantly, the *1992 Year Book* has been revised and presented for use by as wide a readership as possible. Indeed, one of Statistics Canada's priorities is to present its information in a way that makes it widely accessible, and the *1992 Year Book* breaks new ground in this regard.

HOW TO USE THIS *YEAR BOOK*

There are a number of ways of approaching the *1992 Canada Year Book*. For very specific questions, the Index can direct you to relevant sections of the text, as well as to statistical tables at the end of the chapters. For more general information, the Table of Contents can direct you to the book's 22 chapters grouped under five main headings: The Land, The People, The Nation, The Economy, and Arts and Leisure.

The *Year Book* also contains a number of short feature articles that enhance and complement the basic information presented in the chapters. These articles have also been thoroughly referenced in the Index.

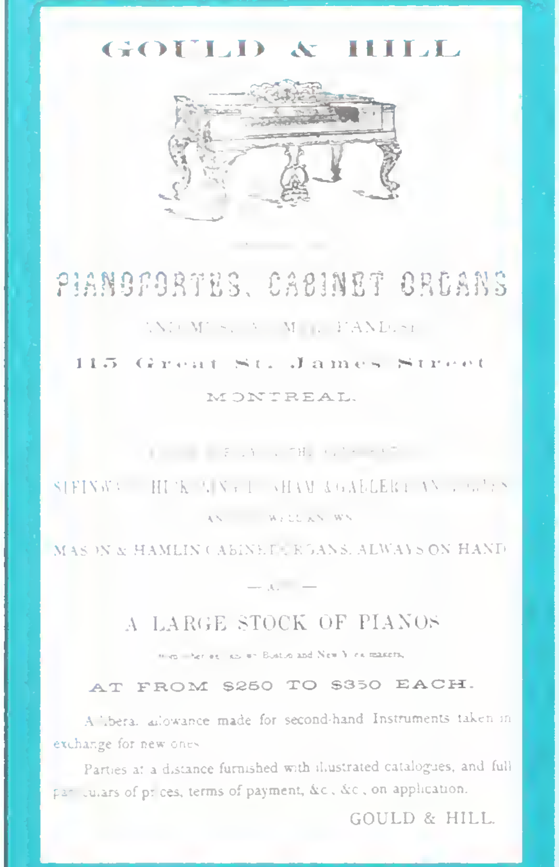
Each chapter features a number of charts and graphs, some of which replace statistical tables included in previous editions. A complete set of tables are found at the end of each chapter, as in past issues of the *Year Book*, and sources are provided, as are legends that explain the meaning of the symbols used.

To find out where information has come from, refer to "Sources" at the close of each chapter, which lists major contributors, most of which are government departments or agencies.

For this special commemorative edition, selected tables that were not supportive of the revised text have been dropped and will be re-assessed for future editions.

The *Year Book* includes four appendices. Appendix A is a complete list of government departments and agencies, with telephone contacts, Appendix B lists Statistics Canada Regional Reference Centres, Appendix C is a table for metric/imperial conversions, and Appendix D presents a Bibliography of sources most-frequently used in researching the many short feature articles which appear throughout the *Year Book*.

Reference years for *Year Book* statistics vary. For some subjects, the most recent statistics available are for 1990-91, for others they cover 1988-89 or 1987-88. In some fields, the only data source is the national census, taken every five years. Since 1991 was a census year, data from this census were not available for the release date of the *Year Book* in late 1991, and readers will find data from the 1986 Census instead.



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Advertising in the 1868 *Year Book and Almanac of British North America.*

GLIMPSES INTO THE YEAR BOOK'S HISTORY

*The first Canada **Year Book** appeared in 1867 and featured, among other statistical topics, results from the 1861 Census. It also had a nine-page advertising section. At 164 pages in length, it sold for twelve-and-a-half cents.*

Throughout the first decade of its life, the Year Book was commercially produced although it had semi-official status through its editor, Arthur Harvey, an employee of the Department of Finance. Early editions covered legislation passed during the year and appointments of public officers, as well as statistics. They also featured day-by-day listings of Memorable Events, of which the entry for January 2, 1877, is typical: "First railway accident in Denmark. Strike of ice harvesters on Hudson River."

*In 1879, Canada's first **Census and Statistics Act** gave the Department of Agriculture a mandate to publish a Year Book:*

"The Minister of Agriculture may cause to be abstracted and tabulated in concise form, for easy reference, such information on various subjects susceptible of being represented by figures, as is contained in the departmental or other public reports and documents."

However, the first edition under the Department's auspices was delayed until 1886, partly because of the pressures of the 1881 Census. The 1886 edition was the work of the first Dominion Statistician, George Johnson, who had previously been a journalist. In fact, the next two Dominion Statisticians, Archibald Blue and R.H. Coats, also began their careers as journalists.

Under Johnson, the Year Book became an official reference on Canada's population, institutions, finance, trade and general conditions. Advertisements were no longer accepted, however, and the book's length increased to almost 500 pages.

The first French edition of the text was produced in 1887, and since then English and French Year Book editions have been released simultaneously.

*In 1905, a new **Census and Statistics Act** created the Census and Statistics Office, a permanent government bureau. The new office launched a revamped Second Series of the Year Book. The new format retained familiar features, but emphasis shifted away from text to statistical tables from government departments and the Census.*

In 1912, the Census and Statistics Office was transferred to the Department of Trade and Commerce and the Year Book was again revamped. To the customary sections on economic and social statistics were added special sections on Canada's history and physical features.

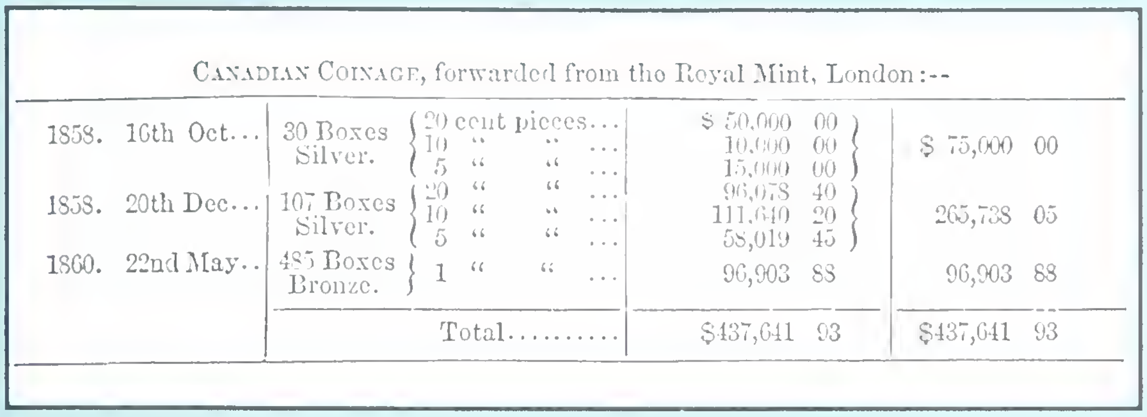
*In 1918, the Census and Statistics Office became the Dominion Bureau of Statistics following passage of the **Statistics Act** of that year. The Bureau's inaugural edition of the Year Book celebrated 50 years of Confederation with special articles and a frontispiece illustration of the Fathers of Confederation.*

INTRODUCING STATISTICS CANADA

As one of the country's largest publishing houses, Statistics Canada produces nearly 300 titles on a wide variety of topics — economic, political, social and cultural.

Some of Statistics Canada's most highly profiled publications include *The Daily*, published every working day of the year, the *Canada Year Book*, *Canada: A Portrait*, as well as the *Canadian Economic Observer*, *Canadian Social Trends* and *Perspectives on Labour and Income*. All these publications are designed to keep the Canadian public informed on both the breaking information of the day, as well as the longer-term implications of this information.

Most of the information produced at Statistics Canada is available in machine-readable form, and in addition, on-line access is available to much of its data through its computerized data base CANSIM.



Canadian Coinage, forwarded from the Royal Mint, London:--

1858.	16th Oct...	30 Boxes Silver.	20 cent pieces...	$ 50,000 00	$ 75,000 00
			10 " " ...	10,000 00	
			5 " " ...	15,000 00	
1858.	20th Dec...	107 Boxes Silver.	20 " " ...	96,078 40	265,738 05
			10 " " ...	111,640 20	
			5 " " ...	58,019 45	
1860.	22nd May..	485 Boxes Bronze.	1 " " ...	96,903 88	96,903 88
			Total.........	$437,641 93	$437,641 93

In the early days of Confederation, Canada imported its coinage from Great Britain. The Royal Canadian Mint was established in 1908.

Over the years, the Year Book gradually became the Bureau's prestige publication, featuring many innovations. For example, the 1939 Year Book introduced colour photography — formal portraits of King George VI and Queen Elizabeth (mother of Elizabeth II) in an article on that year's royal visit.

From 1940 to 1944, the pervasive influence of war could be felt in the pages of the Year Book. Detailed production statistics were needed to track the nation's massive war effort, and the Year Book's many tables chronicled this unprecedented expansion of both industrial capacity and Canada's statistical system.

In the 1950s, the Year Book's subtitle indicated how wide its scope had become: "Official Statistical Annual of the Resources, History, Institutions, and Social and Economic Conditions of the Dominion." Not surprisingly, the 1955 edition ran to 1,374 pages.

In 1967, the Year Book celebrated Canada's Centennial with its first cover photograph — the Peace Tower on Parliament Hill. Inside the book, a double-page photo depicted Parliament in winter, and special sections evaluated 100 years of remarkable economic and social progress.

Under a new ***Statistics Act*** *in 1971, the Dominion Bureau of Statistics became Statistics Canada. In 1977, a special edition of the Year Book used both the Imperial and the metric measurement systems to help ease Canada's transition to the metric system.*

From 1982 to 1984, the Year Book temporarily ceased publication. It appeared again in 1985 — a century after its resurrection by the Department of Agriculture. The book is now produced every two years.

Statistics Canada has a nationwide network of Regional Reference Centres, with toll-free telephone numbers, facsimile facilities and staff trained to help the public access Statistics Canada information. These are listed in Appendix B.

HIGHLIGHTS FROM CANADIAN HISTORY

1867 – Confederation. Nova Scotia, New Brunswick, Ontario and Quebec form Dominion of Canada. Sir John A. Macdonald becomes Prime Minister.

1869 – Red River Rebellion begins. Canadian Parliament arranges purchase of Rupert's Land and the Northwest Territories from the Hudson's Bay Company.

1870 – Manitoba joins Confederation.

1871 – British Columbia joins Confederation.

1873 – Prince Edward Island joins Confederation. North West Mounted Police established.

1875 – Supreme Court of Canada established.

1876 – First long-distance phone call.

1880 – CPR construction begins. Calixa Lavallée composes music to ***O Canada****.*

1885 – North-West Rebellion. Last Spike completes CPR.

1893 – First Stanley Cup awarded.

1896 – Sir Wilfrid Laurier becomes Prime Minister. First motion picture exhibition in Canada.

1897 – Crows' Nest Pass rail agreement. Klondike gold rush starts.

1898 – National prohibition plebiscite. The Yukon becomes separate from Northwest Territories.

1899 – Alaska boundary dispute begins. Canadian troops to Boer War.

1901 – Marconi receives first transatlantic wireless signal at Signal Hill.

1905 – Alberta and Saskatchewan become provinces.

1908 – Lucy Maud Montgomery publishes ***Anne of Green Gables****.*

1909 – J.A.D. McCurdy pilots ***Silver Dart*** *on first powered flight in British Empire.*

1910 – Naval Service Act establishes Canadian Navy.

1911 – Sir Robert Borden becomes Prime Minister after compaigning against Reciprocity Agreement for free trade with the US.

1914 – Canada enters World War I. Turner Valley oil discovery. Hillcrest Mine explosion.

1915 – John McCrae writes ***In Flanders Fields****.*

1916 – Parliament buildings destroyed by fire.

1917 – Borden forms Union Government on conscription issue. First national income tax imposed. Halifax explosion. National Hockey League forms.

1918 – Conscription riots. World War I ends. Universal female suffrage in federal elections.

1919 – Canada signs Versailles Treaty, joins League of Nations. Winnipeg General Strike. First licensed radio station. Canadian National Railways Company incorporated.

1920 – Borden resigns as Prime Minister, succeeded by Arthur Meighen. First Group of Seven painting exhibition.

1921 – William Lyon Mackenzie King becomes Prime Minister. RCMP establishes a post on Baffin Island to secure Canada's claim to the Arctic Archipelago.

1922 – Sir Frederick Banting and Dr. Charles Best discover insulin. Canadian Northern and Canadian Transcontinental railways merge to form CNR.

1923 – Banting wins Nobel Prize.

1929 – Great Depression begins.

1930 – R. B. Bennett becomes Prime Minister. Cairine Wilson appointed first woman senator.

1931 – Statute of Westminster.

1932 – Co-operative Commonwealth Federation (CCF) forms. Trans-Canada Telephone System opens.

1934 – Bank of Canada created by Act of Parliament.

1935 – Bennett's New Deal. King re-elected Prime Minister. Canadian Wheat Board formed.

1936 – Canadian Broadcasting Corporation (CBC) formed.

1937 – Trans-Canada Air Lines formed.

1939 – Canada enters World War II. National Film Board organized.

1941 – Unemployment insurance begins.

1942 – Dieppe raid.

1943 – Quebec Conference — sixth Anglo-American War Conference between Churchill and Roosevelt.

1944 – Conscription Crisis. Canadian troops land in Europe on D-Day.

1945 – World War II ends. Canada becomes founding member of United Nations. Gouzenko spy affair. Family allowance begins. Canada's first nuclear reactor goes active.

1947 – Canadian Citizenship Act. Leduc oil discovery. Gabrielle Roy publishes ***The Tin Flute****.*

1948 – King resigns as Prime Minister, succeeded by Louis St. Laurent.

1949 – Newfoundland joins Confederation. Massey Commission. North Atlantic Treaty signed. BNA Act amended.

1950 – Canadian troops to Korea with United Nations. National rail strike.

1951 – Canada sends NATO contingent to Europe. Old Age Security Act.

1952 – Rt. Hon. Vincent Massey appointed first Canadian-born Governor General. Atomic Energy of Canada Ltd. established. First television transmission.

1953 – Korean War ends. Stratford Festival opens.

1957 – John Diefenbaker becomes Prime Minister. Canada Council forms. Pearson wins Nobel Peace Prize. Canada signs North American Defence Organization (NORAD) agreement.

1958 – Springhill Mine disaster. First flight of CF-105 Avro Arrow fighter.

1959 – St. Lawrence Seaway opens. Government cancels Avro Arrow.

1960 – Canadian Bill of Rights gets royal assent. Quebec's "Quiet Revolution" begins.

1962 – Canada's first satellite, Alouette 1, launched. Trans-Canada Highway officially opens.

1963 – Bomarc missile crisis. Pearson elected Prime Minister. Royal Commission on Bilingualism and Biculturalism.

1964 – Social Insurance numbers issued.

1965 – Canada adopts maple leaf flag. Canada/ US Auto Pact.

1966 – Parliament passes Medical Care Act, instituting medicare. Canada Pension Plan begins. Churchill Falls hydroelectric project begins.

1967 – Canadian centennial. Montreal hosts Expo 67 World's Fair.

1968 – Pearson resigns as Prime Minister succeeded by Pierre Trudeau. Trudeau elected. Armed forces unified. Parti Québecois forms. First Canadian heart transplant.

1969 – Official Languages Act. US tanker **Manhattan** becomes first commercial vessel to travel North West Passage.

1970 – October (FLQ) Crisis — War Measures Act invoked. Metrification policy announced.

1971 – Quebec announces James Bay hydroelectric project.

1972 – First Arctic oil well drilled. Canada launches first communications satellite, Anik A-1.

1973 – Foreign Investment Review Agency formed.

1976 – Parti Québecois becomes Quebec government. Montreal hosts Summer Olympics. Capital punishment abolished.

Duncan Cameron/National Archives of Canada/C-94168

Lester B. Pearson with Nobel Peace Prize, Oslo, Norway, 1957.

1977 – Quebec introduces Bill 101 on French language. VIA Rail passenger service established.

1979 – Joe Clark becomes Prime Minister. Mississauga train derailment.

1980 – Trudeau re-elected Prime Minister. Quebec referendum rejects sovereignty-association. National Energy Program. Terry Fox starts cross-Canada "Marathon of Hope".

1982 – Constitution Act moves constitutional power from Britain to Canada. Canadian Charter of Rights and Freedoms entrenched in Constitution. First woman Justice appointed to the Supreme Court of Canada. Worst Recession since the 1930s.

1984 – Trudeau resigns, succeeded by John Turner. Brian Mulroney elected Prime Minister. First Canadian in space, on US shuttlecraft.

1987 – Meech Lake Accord talks begin. "Black Monday" — World stock markets crash.

1988 – Free Trade Agreement signed. Calgary hosts Winter Olympics. Supreme Court strikes down Criminal Code abortion provisions.

1989 – Canadian Armed Forces opens combat roles to women. VIA Rail lays off 2,700 employees. Canada trades from observer to member in Organization of American States.

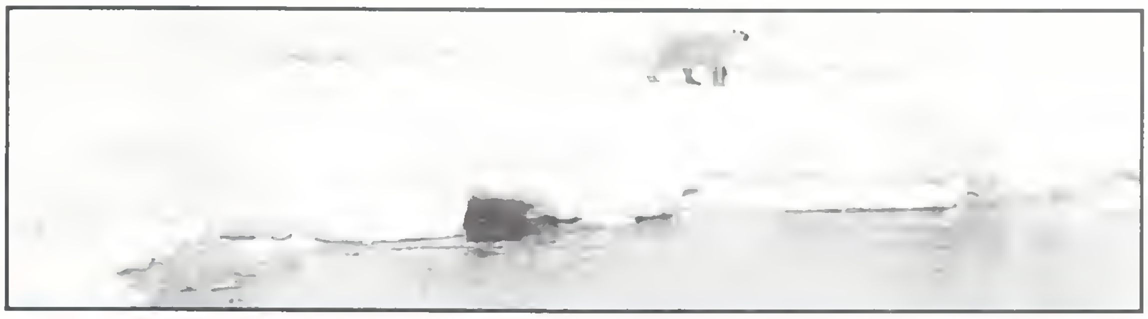
1990 – Meech Lake Accord dies. Free Trade implemented. Oka Crisis. Canada joins United Nations forces against Iraq in Persian Gulf.

1991 – Goods and Services Tax implemented. Canadian forces in Gulf War. Canada/US acid rain agreement.

THE LAND

Section 1

Chapter 1


C.R. 'Scotty' Yook/National Archives of Canada/PA 141892

PHYSICAL SETTING

1.1 INTRODUCTION

Post Office Department/National Archives of Canada/PA 61531

CANADA IS A VAST AND DIVERSE NATION, surpassed in size only by the USSR. Its 10 million square kilometres of territory embrace great fertile prairies, immense areas of lakes and boreal forest, rugged mountain ranges, and vast expanses of wind-swept northern tundra. In 89% of this territory, no permanent settlements have been established.

The greatest north-to-south distance in Canada stretches from Cape Columbia on Ellesmere Island in the Northwest Territories to Middle Island in Ontario's Lake Erie — 4 634 km. From east to west, the greatest distance is from Cape Spear, Newfoundland, to the Yukon–Alaska border — 5 514 km.

Canada also encompasses the offshore areas of the Canadian continental margin, including Hudson Bay; these areas cover more than 6.5 million square kilometres.

Canada's size and diversity have profoundly influenced the nation's character. Before European contact, aboriginal peoples had established distinct cultures in most regions of what is now Canada. For these peoples, the natural world was spiritually alive, the matrix for complex interactions between humans and all other living things.

By contrast, the first European settlers felt themselves on the tenuous margin of a dark wilderness that required mastering and taming. The land supplied raw materials for economic progress that could overcome the country's difficult terrain and harsh climate.

Since those early days, Canadians have used an abundance of natural and human resources to build a prosperous nation. However, an understanding has been growing that the true basis of wealth is not ownership or dominion over the land, but wise stewardship.

This chapter introduces Canada's physical and economic geography, showing how diverse resources and peoples have interacted to create a nation. It also examines government involvement in protecting the nation's natural and historic heritage.

1.2 REGIONAL GEOGRAPHY

Politically, Canada is divided into 10 provinces and two territories. Each province administers its own natural resources. In the Yukon and Northwest Territories, resources — except for game — are administered federally because of the extent and remoteness of the territories and their sparse population.

Newfoundland, Canada's most easterly province, joined Confederation in 1949. The larger part, Labrador, borders the North Atlantic Coast to Hudson Strait and extends inland about 750 km. A barren mosaic of rocks, wetlands and lakes, Labrador has rugged coastline promontories that rise directly from the sea. The Torngat Mountains dominate the extreme north, rising to 1 622 m

DISCOVERING CANADA...

One of Canada's first European explorers was Leif Eriksson, a Norseman who arrived on the continent as early as 1000 A.D. Eriksson was sailing home to Norway from Greenland when he went off course. Some reports say he landed on the northern tip of Newfoundland, while others claim he landed in Nova Scotia.

Eriksson set up a short-lived settlement and dubbed the fertile region Vinland because of the wild grapes he found there. Later expeditions were made to the area by Leif's brother, Thorvald, and other Icelandic explorers.

at Mount Caubvick. Many Labrador river valleys are well-forested and the rivers have numerous water falls. Coastal waters abound in fish, and the Precambrian rocks are rich in iron ore.

The Island of Newfoundland is rugged; the barren, rocky surface is dotted with innumerable ponds and swamps. The Long Range Mountains parallel the western coast and rise to heights of over 800 m. Old, worn fold-ridges extend northeast to southwest.

Newfoundland's capital, St. John's, lies on the East Coast of the Avalon Peninsula. Other urban areas are Corner Brook on the West Coast and Grand Falls in the central part of the island.

Prince Edward Island, Canada's smallest province, is cradled in the Gulf of St. Lawrence, east of New Brunswick and north of Nova Scotia. It is relatively flat, attaining an altitude of about 140 m above sea level. The coast is greatly indented with bays and inlets running inland. The provincial capital is Charlottetown.

Nova Scotia is a peninsula surrounded by the Bay of Fundy, the Atlantic Ocean, the Gulf of St. Lawrence and the Northumberland Strait. It is connected to New Brunswick by the Isthmus of Chignecto. The northeastern portion, Cape Breton Island, is separated from the mainland by the Strait of Canso, traversed by a permanent causeway. The island is almost bisected from northeast to southwest by the saltwater Bras d'Or Lake. While a wooded upland rises in the north, the mainland is mostly flat. The Atlantic side is rocky and deeply indented, with bays and inlets providing many harbours.

The two large urban areas are Halifax–Dartmouth and Sydney–Glace Bay. Halifax, the capital, is situated on one of the best natural harbours in the world.

New Brunswick is nearly rectangular, its extensive seacoast including the Chaleur Bay on the north, the Gulf of St. Lawrence and Northumberland Strait on the east, and the Bay of Fundy on the south. The province adjoins Quebec and the United States.

A northwestern plateau, 300 to 450 m above sea level, is deeply dissected by valleys leading to the Saint John River, which flows southward. The central highlands are a dissected plateau about 610 m above sea level. A maritime plain slopes eastward from the highlands and extends along New Brunswick's coast from the southern shore of Chaleur Bay.

New Brunswick's capital is Fredericton. Saint John, at the mouth of the Saint John River, is the principal port and industrial centre.

Quebec, Canada's largest province, extends from the St. Lawrence River and Gulf of St. Lawrence north to Hudson Strait, and west to Hudson Bay and a line running due south of James Bay. The province is bounded on the southwest by the Ottawa River and on the northeast by Labrador. South of the St. Lawrence are the Eastern Townships and the Gaspé Peninsula.

Quebec has three physiographic regions. The plateau-like highlands of the Canadian Shield cover 80% of the province, occupying most of the area north of the St. Lawrence River. A mass of ancient rocks, the highlands have a rough, broken surface strewn with lakes. The second region, the Appalachian Mountains, extends south of the St. Lawrence. Finally, the St. Lawrence lowlands are covered by deep clay deposited by the Champlain Sea as Pleistocene ice sheets melted. The flat topography and fertile soils make this region well-suited for agriculture.

The capital, Quebec, was founded by Samuel Champlain in 1608. Montreal, the largest city, is one of North America's great industrial, commercial and financial centres.

Ontario, Canada's second largest and most populous province, has a freshwater shoreline on the Great Lakes and a saltwater shoreline on Hudson Bay and James Bay. The province has two major physiographic regions — the Canadian Shield and the lowlands of the Great Lakes–St. Lawrence region.

The Canadian Shield — a rugged, rocky plateau strewn with lakes and muskeg — is a difficult surface for ground transportation. The height of land lies in a wide crescent north of Lake Superior. A slope descends gently toward James Bay and Hudson Bay to a marginal strip, the Hudson Bay lowlands.

The southern lowland, about one-sixth the size of northern Ontario, has glacial features such as rock plains, morainic hills, till plains, clay plains, drumlins and sand plains. The southwestern tip extends farther south than any other part of Canada.

The lowland is densely populated. In Canada's early days, a favourable climate, fertile soil and ease of travel made the region important for agriculture; today it is one of the world's great industrial agglomerations, with the provincial capital, Toronto, as its focal point. Toronto is Canada's largest city.

Manitoba, the most easterly of the three Prairie provinces, has two distinct topographic forms, the largest falling within the Canadian Shield. The demarcation line between these forms begins near the southeast boundary and runs diagonally northwest along the eastern shores of Lake Winnipeg to the Saskatchewan border. The northern area has heavily glaciated topography, and its major rivers, the Nelson and the Churchill, flow into Hudson Bay. The southwestern region is the lowest of three step-like formations across the great central plains. Floored by deep fertile clay soils left by glacial lakes, the region is separated from the Saskatchewan Plain along its western boundary by the Manitoba Escarpment, a narrow belt of hilly terrain.

Winnipeg, the capital, is the industrial centre of Manitoba.

Two-thirds of **Saskatchewan** falls within Canada's prairie lowland, the great grain-basket of the nation. The demarcation between the lowlands and the Canadian Shield, crossing into Saskatchewan near the 55th parallel, continues northwest across the province, becoming less sharply defined. The second step of the prairie formation, the Saskatchewan Plain, has deep fertile soil. Some parts of the region are exceptionally flat; others are hilly with innumerable seasonal sloughs. The highest of the prairies steps extends from the slope of the Missouri Coteau. The Cypress Hills rise above this level. Cutting across the lowland are the branches of the Saskatchewan River that flow to Lake Winnipeg.

Regina, the capital, and Saskatoon serve mainly as distributing centres for surrounding areas.

Alberta lies mainly in the interior plains. The south of the province is dry, treeless prairie. Northward, the prairie gives way to poplar forest interspersed with open prairie, which in turn gives way to mixed forest.

From the Saskatchewan border in the south, the plain rises gradually to merge into the Rocky Mountain Foothills, part of the Western Cordilleran region. The high peaks of the Alberta Rockies rise close to or on the border with British Columbia.

The two largest cities, Calgary and the capital, Edmonton, are located in one of Canada's richest oil and gas producing areas.

British Columbia lies almost entirely in the Cordilleran region, which consists of parallel mountain ranges oriented north-south and separated by a set of parallel valleys.

In the east, the Rocky Mountains present a continuous range of wall-like ridges, sliced by glaciation into sharp peaks, knife-like edges and deep hollows. Some peaks in the Canadian Rockies rise to 3 500 m or more. The central section is marked off by the Rocky Mountain Trench containing the headwaters of the Kootenay, Columbia, Fraser, Peace and Liard rivers. Westward, relief is lower and broader and the effects of glaciation are not as spectacular. This area features several mountain ranges, with plateaus and lake basins between. In the western section, the Coast Mountains extend southward from the St. Elias Mountains where the loftiest peaks on the continent thrust out of glistening icefields.

The inner passage adjacent to the coast — the Strait of Georgia, Queen Charlotte Strait and Hecate Strait — is one of the finest natural waterways in the world. Vancouver Island rises steeply from a rocky coastline; in the Queen Charlotte Islands, individual mountain ranges are separated by deep, narrow valleys.

Vancouver, the largest city, is a rapidly growing industrial centre and seaport. Victoria, the capital, clings to the southern tip of Vancouver Island.

The **Yukon**, north and slightly west of British Columbia, is a triangle of plateaus and mountain ranges bounded by the Northwest Territories and Alaska. Its only seacoast extends along the Arctic Ocean west of the Mackenzie River Delta. Between the Coast Mountains on the west and the Mackenzie Mountains on the east lies a plateau of rough, irregularly rolling upland. Numerous river valleys cut through mountains and plateaus. In the southwest, many peaks of the St. Elias Mountains soar to heights of over 4 000 m. The highest point in Canada, Mount Logan (5 951 m), is located in this mountain range.

The entire territory is north of latitude 60°; part extends beyond the Arctic Circle. The Alaska Highway links the region with British Columbia and Alberta. The capital and main urban centre is Whitehorse.

CANADIAN EXTREMES

Canada's geographical extremes form the limits of the largest country in the Western Hemisphere and the second-largest in the World:

- **Most northerly point:**
  Cape Columbia on Ellesmere Island
- **Most southerly point:**
  Middle island in Lake Erie
- **Most easterly point:**
  Cape Spear, Newfoundland
- **Most westerly point:**
  Yukon-Alaska border
- **Highest mountain:**
  Mount Logan, Yukon: 5 951 m
- **Largest Lake:**
  Lake Superior, Ontario:
  82 243 km²
- **Longest river:**
  Mackenzie River, Northwest Territories: 4 241 km
- **Largest island:**
  Baffin Island, Northwest Territories:
  507 451 km²
- **Longest mountain range:**
  Coast Mountains, British Columbia and the Yukon Territory:
  1 500 km.

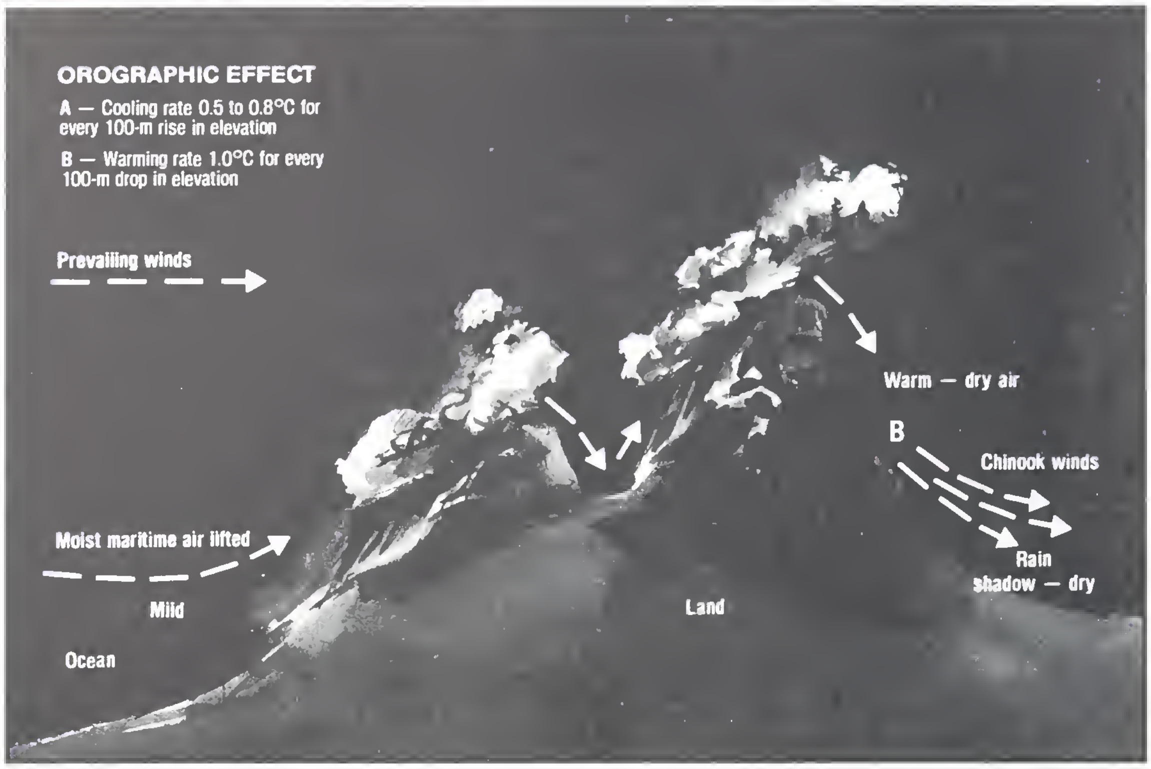
RAINSHADOWS

In the three-hour drive along British Columbia's Highway 1 from the lower Fraser Canyon to the North Thompson River, the landscape changes completely. The lush greenery of the coastal rain forest gradually gives way to the dry grass and sagebrush of the leeward side of the Coast Mountains.

This shift in terrain is the result of what climatologists call the "orographic effect" — the tendency of air to lose moisture with increasing elevation. The effect is commonly seen in mountainous areas, where rainfall on the windward side of a range is much greater than on the leeward side.

In BC, moisture-laden westerly winds moving off the Pacific Ocean begin to rise when they encounter the Coast Mountains. As they rise, they cool at a rate of 0.5°C to 0.8°C for every 100-metre increase. Because cool air holds less moisture than warmer air, the cooling process creates clouds, fog and abundant precipitation.

By the time the winds pass over the crests of the Coast range, they have already lost most of their moisture. As they descend, increasing air pressure causes them to heat up; water droplets evaporate, clouds disperse, and hence relatively little moisture falls to the ground.


OROGRAPHIC EFFECT
A — Cooling rate 0.5 to 0.8°C for every 100-m rise in elevation
B — Warming rate 1.0°C for every 100-m drop in elevation
Prevailing winds
Warm — dry air
B
Chinook winds
Moist maritime air lifted
Rain shadow — dry
Mild
Land
Ocean

Orographic effect.

Northwest Territories includes all Canadian territory north of the 60th parallel, except for the Yukon and the northwestern tip of Quebec and Labrador. All islands south of the 60th parallel in Hudson Bay and James Bay are also part of the Territories. This vast area, more than one-third of Canada, is characterized by extremes in topography, flora and fauna, and climate (permafrost occurs throughout the Territories). East of the mountain fringe along the Yukon boundary, the mainland plains slope down to Hudson Bay and northeast to the Arctic Archipelago. The interior plains of the central continent stretch to the Arctic Ocean. Across the low-lying mainland flows the Mackenzie River, draining Great Slave Lake and Great Bear Lake before emptying into the Arctic Ocean. Treeless tundra covered extensively with muskeg and studded with countless lakes and swamps makes up the northeast. In the Archipelago, high mountain ranges lie north to south across Baffin, Devon and Ellesmere islands.

The capital, Yellowknife, is situated on the north shore of Great Slave Lake. Only the Mackenzie Delta and Great Slave Lake areas are accessible by road from the rest of Canada. In the eastern Arctic, the focal point is Iqaluit (Frobisher Bay).

1.3 ECONOMIC GEOGRAPHY

SETTLEMENT

No permanent settlements exist in about 89% of Canada, and only Prince Edward Island is completely occupied. Large parts of the interior of Nova Scotia, New Brunswick and the Gaspé Peninsula are unpopulated. Around the Newfoundland coast and on the shores of the St. Lawrence River below Quebec City, settlement occurs only in narrow bands.

About 58% of Canada's population lives between the American border and a 1 046 km east-west strip from Quebec City to Sault Ste Marie, Ont. In this narrow band, the cities of Montreal, Toronto, Hamilton, Ottawa, London, Windsor, Quebec, and Kitchener account for more than one-third of Canada's population.

Canada's largest tract of continuous settlement winds through Manitoba, Saskatchewan and Alberta. This block occupies about 6.2% of Canada's area and boasts five major cities: Edmonton, Calgary, Winnipeg, Saskatoon and Regina. North of this mainly agricultural block, astride the Alberta–British Columbia border, is the Peace River district, an agricultural area stretching to the 57th parallel.

The southern half of British Columbia is settled in interconnecting strips following mountain valleys and coastal plains. Population is dense in the lower mainland around Vancouver.

MAJOR WEATHER RECORDS AND EVENTS

THE WARMEST AND THE COLDEST

In Canada, wide variances in temperature occur from season to season and coast to coast. The highest temperature ever recorded in Canada was 45°C at Midale and Yellow Grass, Saskatchewan, on July 5, 1937. The lowest temperature of −63°C was observed at Snag, Yukon, on February 3, 1947.

HEAT WAVES AND COLD SPELLS

While day-to-day changes in weather conditions are the norm, on occasion one type of weather will lock in for days or weeks at a time. Such was the case when Canada's worst heat wave struck the western and central regions of the country in July 1936. For a week and a half, humid 37°C temperatures prevailed. Crops were destroyed and 780 people died from the heat.

Though heat waves rarely last long, cold spells can last several weeks. One of the longest cold spells on record hit Saskatoon in 1936. The temperature remained below −18°C for 58 consecutive days from January 3 until March 1.

The most extreme change in temperature took place in January of 1962 in Pincher Creek, Alberta, when a warm dry wind, known as a "Chinook," brought the temperature up from −19° to 22°C in one hour!

THE WETTEST AND THE DRIEST

As moist air from the Pacific Ocean meets the mountainous coastline of British Columbia, downpours are the inevitable result. In fact, apart from short-duration rainfall, all Canadian records for greatest amounts of precipitation are held by locations on the West Coast. Henderson Lake on Vancouver Island set the Canadian record of 8 100 millimetres (mm) annual precipitation in 1931. Revelstoke Mount Copeland in the BC mountain interior holds the distinction of receiving the most snowfall in a single season — 2 400 centimetres (cm) in the winter of 1971-72.

Canada's Arctic has been called a frozen desert — and for good reason. While much of the North is covered in snow for many months throughout the year, precipitation can average less than 100 mm a year across the Arctic's western and central island. Arctic Bay in the Northwest Territories holds the record for the lowest annual amount of precipitation — 12.7 millimetres (mm) in 1949.

FLOODS AND DROUGHTS

Most floods are caused by sudden and intense downpours. The severest flood in Canadian history occurred on October 14-15, 1954, when Hurricane Hazel brought 214 mm of rain to the Toronto region in just 72 hours. The Don and Humber rivers and the Etobicoke Creek flooded, killing 80 and causing the equivalent today of over $100 million in damage.

Spring snowmelt has also been the cause of many of Canada's worst floods. For instance, in 1950, the Red River in Manitoba rose 10 m above normal, submerging one-fifth of Winnipeg and forcing the evacuation of 100,000 people.

Too little water has been a recurring problem on the Prairies since the soil was first tilled. The most serious drought came in the 1930s. Between 1933 and 1937, the region received only 60% of its normal rainfall. The drought of the 1980s rivalled that of the 1930s in duration and intensity, reducing grain exports by $4 billion in 1988 alone.

STORMY WEATHER

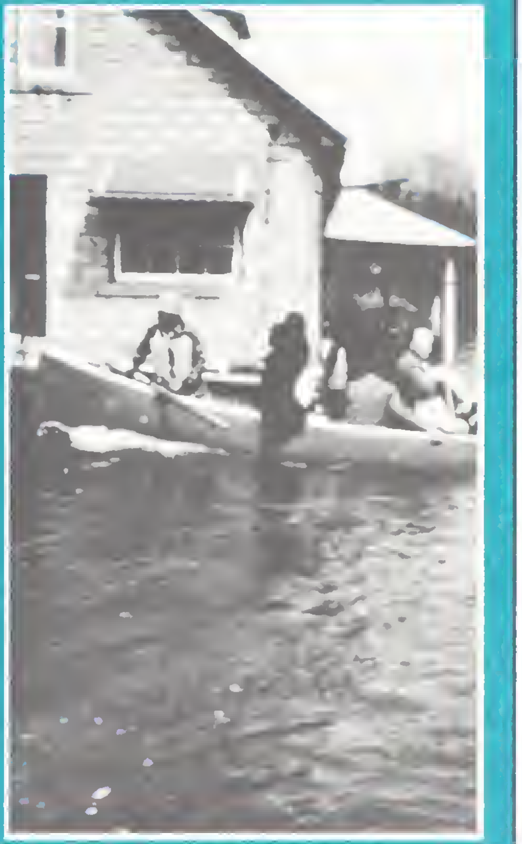
No region of Canada is secure from the fury of winter blasts and blizzards. Intense winter storms are frequently accompanied by numbing cold, ice or heavy snow. For the residents of Newfoundland, the blizzard of 1959 was one of the worst on record. The storm, which struck on February 16, took six lives, left 70,000 Newfoundlanders without power, crippled telephone service, and blocked highways and roads with drifts 5 m high.

In the summer months, thunderstorms are frequent afternoon phenomena across much of the southern portion of the country. Southwestern Ontario holds the distinction of having the highest average annual number of thunderstorm days at 34. This also is the region most frequently hit by tornadoes (an average of 21 each year). On May 31, 1985, eight tornadoes moved across southern Ontario, causing $100 million in property damage. The most severe damage was in Barrie, Ontario, where 8 of the 12 deaths from the tornado outbreak occurred.

Tornadoes can also occur in the West. On July 31, 1987, a tornado hit Edmonton, Alberta, killing 27, injuring over 200, leaving 400 homeless and causing more than $250 million in damage in what has been called "the greatest single storm loss in Canadian history."

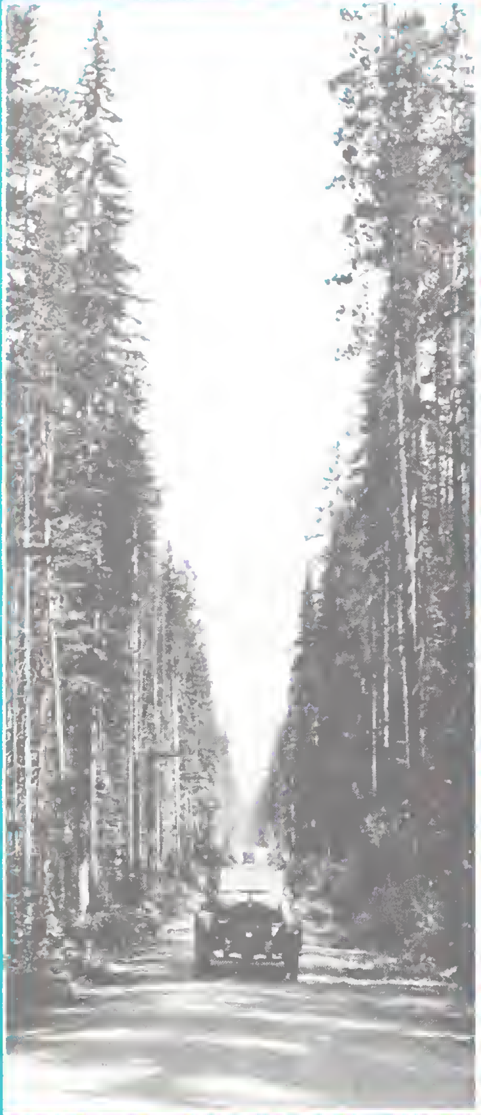
A. & W. Gavin/National Archives of Canada/C [illegible]

Hamilton, Ontario, December 1898.



Emergency Preparedness Canada

Heavy rains can cause severe flooding.



Department of the Interior/National Archives of Canada/PA-49871

Snow Peak Avenue, Canadian Rockies.

CANADA'S CLIMATE

Canada's climate varies considerably from region to region. In the extreme north, the temperature rises above 0°C for only a few months each year. Most Canadians, however, live within 300 kilometres (km) of the country's southern border where mild springs, warm summers and crisp autumns prevail at least eight months out of 12.

The climate in Canada changes with each season as the hours of sunlight increase and decrease and as North America's weather systems shift. The terrain — mountain ranges, plains and bodies of water — also plays an important role in shaping the climate of each region of the country.

THE WEST COAST

The west coast of British Columbia has the most temperate climate in Canada, thanks to mild, moist Pacific Ocean airstreams. As the moist air rises over the mountains, it cools and precipitation falls on the westward mountain slopes — usually as rain at lower altitudes and snow at higher ones. The valleys between the mountain ranges receive much less precipitation and experience warm arid summers.

THE PRAIRIES

The Prairies, which extend from the Rocky Mountains east to Winnipeg, Manitoba, make up the Canadian section of the vast North American Great Plain. Cold winters and hot summers are the norm here, with relatively light precipitation no matter what the season. For instance, in southern Saskatchewan, annual precipitation averages less than 350 millimetres (mm), compared to 1 110 mm in Vancouver and 760 mm in Toronto.

GREAT LAKES/ ST. LAWRENCE

More than half the Canadian population lives close to the Great Lakes or along the St. Lawrence River. Here, winter brings heavy snowfalls. Spring can be fleeting and somewhat unpredictable. Summers tend to be longer and more humid than in other parts of Canada. Mean daily temperatures reach close to 20°C from mid-June to mid-September with week-long heat waves in the 30s a common occurrence.

ATLANTIC CANADA

The combined influence of air masses from northern and eastern Canada and the United States with air currents off the ocean give this region one of the most variable climates anywhere in the country. In winter, temperatures can vary widely as arctic air is replaced by maritime air from passing storms. Snowfall can be heavy, particularly in New Brunswick, and fog is common in spring and summer, especially in Newfoundland. The warmest month is July, when mean temperatures range from 16-18°C.

North of these areas lie a number of remote settlements, the largest of which are in Ontario and Quebec between the 47th and 50th parallels. Outside these urban-rural blocks are smaller settlements based on mining, forest industries, transportation, administration, defence, hunting and fishing.

LAND USE

Environment Canada administers a federal land-use policy that provides guidelines to federal departments and agencies on proper land use and management. Environment Canada analyzes the sustainability of current land uses and the impact of federal policies and programs on land resources. The department has also investigated changes in agricultural landuse, the effects of mining on the environment, and potential methods of planning land and water use.

Established under federal-provincial agreements, the Canada Land Inventory (CLI) classifies lands according to their capabilities for agriculture, forestry, recreation, wildlife, and sport fishing. These data, used for regional planning, are contained in a computerized Canada land data system (CLDS). This system includes more than 3,000 CLI maps, as well as census data and information on federal land holdings, watershed boundaries and ecological reporting systems. These data are used to analyze options for land-use planning and management.

G. Carroll/National Archives of Canada/C-33986

At the beach in Prince Edward Island.

THE BOREAL FOREST

Spanning the entire country immediately north of the Prairies, the Great Lakes and the St. Lawrence River is the boreal forest. Snow usually covers the ground here for more than half the year. Precipitation is light, except along the Labrador coast where Atlantic storms exert an influence.

THE HIGH ARCTIC

Further north above the tree line lies the High Arctic, where temperatures in many areas might climb above freezing for only a few weeks in July/August. A few feet below the delicate but tenacious vegetation that grows in summer, the ground remains frozen year-round.

Over the centuries, Canadians have learned to pay attention to climatic extremes. Futile attempts to start a car at −30°C, for instance, have imparted a healthy respect for Mother Nature upon the national psyche. At the same time, the fruits of modern technology — heated and air-conditioned shopping malls and inter-connected office complexes — have insulated Canada from the extremes of heat and cold, allowing them to enjoy each season only in its more forgiving moments.

Indian and Northern Affairs

A sunny day in Iqaluit, Northwest Territories.

PROVINCIAL ECONOMIES

Newfoundland's economy, once dependent on fishing, now focuses on extracting and processing natural resources. Pulp and paper and food processing are the main manufacturing sectors. Iron ore is most important in the province's substantial mining industry, with zinc and asbestos also having some importance.

In Newfoundland's extensive fishing industry, cod accounts for over half the landed value. Because of poor soil and adverse climate, agriculture is of minor importance.

On **Prince Edward Island**, agriculture is the mainstay of the island — its most important primary resource industry. Almost 70% of the land is cultivated, producing chiefly potatoes, with some mixed grains. Dairying and livestock raising are also important.

Fishing, especially of lobster and cod, is also an important resource industry. Food processing is the chief manufacturing industry.

Nova Scotia's fishery, the largest in the North Atlantic, is second in Canada to that of British Columbia. The principal species are lobster, cod, scallop and haddock. About 10% of the province's land is agricultural, mostly in the Annapolis Valley and northern Nova Scotia. Agriculture centres on dairy products, livestock and fruit.

WIND NAMES

Most Canadians know what a Chinook is, but other names for winds are more obscure. Some refer to the wind's origin or destination; others describe its temperature, or mimic its sounds and effects. Here is a sample of regional Canadian winds.

Barber*. A strong wind containing precipitation that freezes on contact, especially in beards and hair.*

Blizzard*. A cold, gale-force wind laden with blinding powdery snow. This wind reduces visibility to under 1 kilometre, and usually lasts for more than six hours.*

Chinook (Snow Eater)*. As its name implies, this dry, warm wind rapidly turns snowbanks into puddles. It blows onto the Prairies from the eastern slopes of the Rockies.*

Cold Marker*. A cold north wind creating ground snowdrifts.*

Dust Devil*. A rapidly rotating column of air, about 30 to 100 metres high, that picks up dust, straw, leaves and other light material.*

Nor'easter*. A moderate to strong wind that blows from the northeast across the Atlantic provinces. It usually brings heavy cloud cover and precipitation.*

Plow Wind*. A strong downdraft associated with squall lines and thunderstorms, and sometimes having the force of a tornado.*

Scud or Flaw*. A sudden gust.*

Squamish*. A violent out-blowing of winds from Squamish along Howe Sound and through the channels around Bowen Island, British Columbia. A squamish is caused by strong, wintertime high pressure systems centred over the interior of the province.*

Suete*. A strong wind along the west coast of Cape Breton Island, Nova Scotia.*

Taku*. A hurricane-force wind that blows down the Taku River Valley in British Columbia.*

Wreckhouse Effect*. An extremely strong wind in western Newfoundland between Port-aux-Basques and Stephenville. These winds have been known to blow trailer trucks off the Trans-Canada Highway.*

Yoho Blow*. A strong, cold wind localized in British Columbia's Yoho Valley between Kicking Horse Pass and the town of Field. A Yoho Blow occurs when there is a general inflow of cold air from the west.*

Coal is the principal mineral produced; some gypsum and salt production also occurs. Manufacturing is varied and includes food processing, forest products and transportation equipment.

In **New Brunswick**, forest products and food processing are the principal manufacturing industries. Zinc, lead and byproduct metals are important in mining. From the sea come lobster and crab — the most important species in the provincial fishery. Agriculture is varied, but dairy products and potatoes predominate.

Quebec accounts for about one-quarter of Canadian manufacturing. Textile and clothing industries are most important, followed by food processing, pulp and paper, primary metals, chemicals, metal fabricating, the wood industries and transportation equipment. Quebec is also a major producer of gold, iron ore and copper, and one of the world's leading producers of asbestos. Hydroelectric power is important to Quebec's economy.

Dairy products and livestock are the province's most important agricultural products. In the sea fishery, cod is the principal species.

Ontario accounts for about half of Canadian manufacturing, with transportation equipment being the largest single industry. Other important industries include food processing, primary metals, metal fabricating, electrical products, chemicals, pulp and paper, and printing. Although Ontario ranks second in the value of its total mineral production, it comes first in metals (these include nickel, gold, copper, zinc and uranium).

Ontario has the highest agricultural receipts in Canada. Livestock and dairy farming predominate, but tobacco and vegetables are important cash crops. In the freshwater fishery, conducted primarily in the Great Lakes, pollution and overfishing have led to declines.

Manitoba's economy is built on agriculture. Wheat and other grain crops are most important, followed by livestock. There is also a small commercial freshwater fishery.

The province's manufacturing is varied, led by food processing and metal fabricating. Mineral production focuses on metals, especially nickel, copper and zinc; petroleum is also important.

In **Saskatchewan**, agriculture is the leading industry, dominated by wheat and other grains. The important minerals sector includes non-metals (Saskatchewan is a major world producer of potash), fuels, and metals (notably uranium). The varied manufacturing sector is relatively small.

Alberta accounts for about half the value of minerals produced in Canada. Almost all of this comes from fuels — petroleum, natural gas and its byproducts (including natural gas liquids and sulphur) and coal. The province's grain and livestock production is also important. Alberta has a large, diversified manufacturing sector.

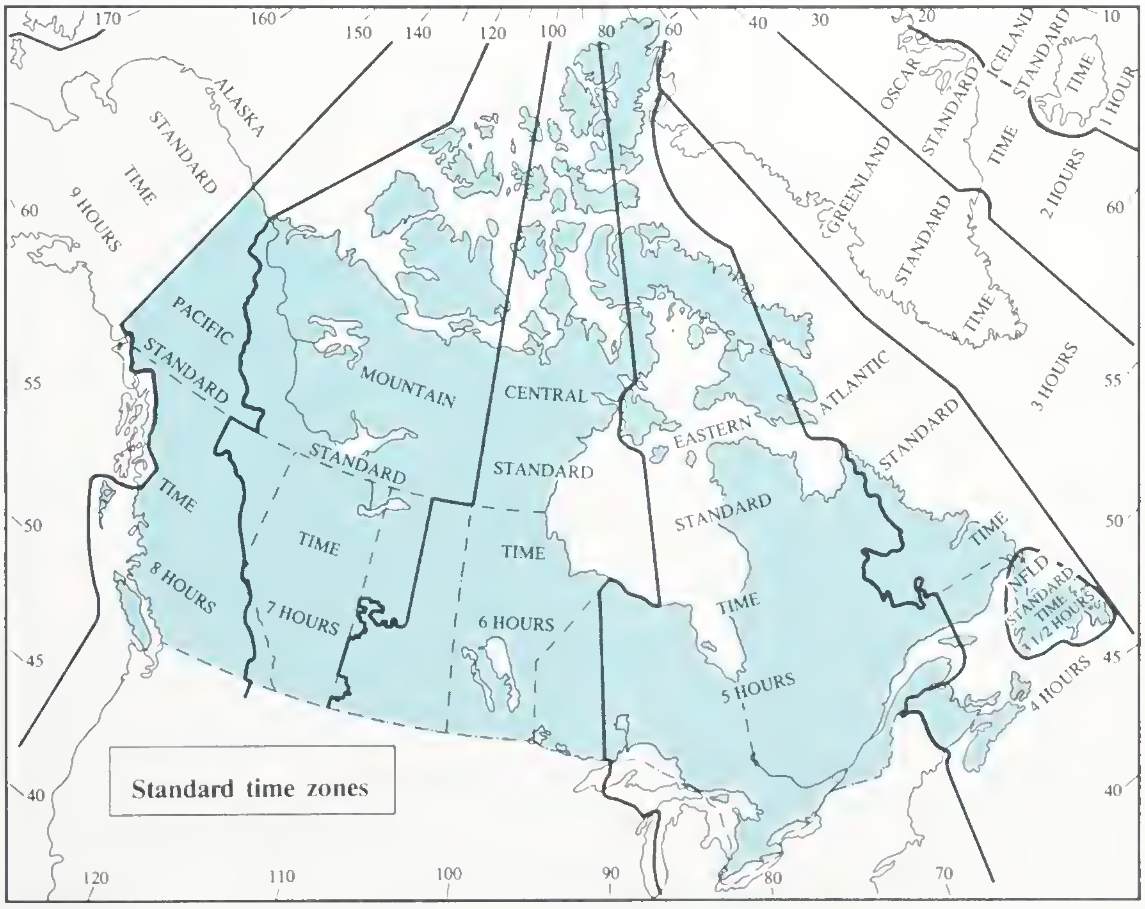
In **British Columbia**, natural resources are the basis of the economy. The forest industry is particularly important, both as a primary activity and as the largest component of the province's manufacturing sector. Lumber is the main forest product, but production of pulp and paper is also substantial. Food processing and metals are other important manufacturing industries. The province's extensive minerals sector is dominated by fuels (coal, natural gas and petroleum) and metals (notably copper and molybdenum).

Dairy products and cattle are BC's most important agricultural products, followed by fruit, vegetables and specialty crops. In the extensive fishery — Canada's largest — salmon makes up over half the landed value. Herring is also important.

Mining is the chief economic activity in the **Yukon**, with zinc, gold, lead and silver predominating.

The **Northwest Territories'** mining industry is also large, dominated by zinc, gold and lead. Some oil and gas is also produced. Fur and fisheries, mainstays for the native population, are exploited commercially, though on a small scale.

Map 1.1
TIME ZONES


ALASKA STANDARD TIME 9 HOURS
PACIFIC STANDARD TIME 8 HOURS
MOUNTAIN STANDARD TIME 7 HOURS
CENTRAL STANDARD TIME 6 HOURS
EASTERN STANDARD TIME 5 HOURS
ATLANTIC STANDARD TIME 4 HOURS
NFLD STANDARD TIME 3 1/2 HOURS
GREENLAND STANDARD TIME 3 HOURS
OSCAR STANDARD TIME 2 HOURS
ICELAND STANDARD TIME 1 HOUR
Standard time zones
170
160
150
140
120
100
80
60
40
30
20
10
60
55
50
45
40
120
110
100
90
80
70

TIME ZONES

Canada has six time zones. The most easterly, Newfoundland standard time, is three hours and 30 minutes behind Co-ordinated Universal Time (UTC). The most westerly, Pacific standard time, is eight hours behind UTC. From east to west, the remaining zones are called Atlantic, Eastern, Central and Mountain.

CANADIAN TIME ZONES

Before 1884, local time in Canada was determined by setting noon as the moment when the sun reached its highest point of the day. Because this moment occurs later in the day from west to east, local time varied considerably across the country.

This was not a problem until railways made it possible to travel quickly over long distances. On local time, train timetables were virtually impossible to work out.

The solution was uniform time zones. Adopted in 1884, Standard Time divided Canada into seven zones — Newfoundland, Atlantic, Eastern, Central, Rockies, Pacific and Yukon. From the most easterly zone (Newfoundland) to the most westerly (Yukon), the time difference was five-and-a-half hours.

In 1973, the Yukon Territory switched to Pacific Time, leaving six zones with a four-and-a-half-hour time difference.

In 1918, another "timely" innovation gave Canadians a longer period of summer sunlight at the end of the working day. For Daylight Saving Time, clocks across the country (except in Saskatchewan) are set forward one hour on the first Sunday in April. On the last Sunday in October, the nation's clocks are reset to Standard Time.

Imperial Oil Archives

On the trail . . . Rockies' foothills.

Environment Canada Parks Service

Pulpit Rock, Nahanni National Park, Northwest Territories.

CANADA'S GEOLOGY

GEOLOGICAL CHANGE

Because geological change occurs over thousands or even millions of years, natural landscapes seem comfortingly stable.

But in fact, the earth's 4.5 billion-year history has been marked by vast upheavals — colliding continents thrusting up mountain ranges, and sediments from rising oceans burying these ranges only to be worn away in their turn by wind and water. Canada's immense territory shows evidence of all these events, caused by what geologists call plate tectonics.

This term refers to the process by which the earth's crust — the hard rock shell overlaying the planet's molten interior — constantly forms and reforms.

The crust is composed of 15 major plates floating like rafts in a sea of molten rock. From 70 to 100 kilometres thick, the plates move no more than a few centimetres a year — a brisk trot, by geological standards.

The engine driving the plates is a convection or boiling in the asthenosphere, the molten upper portion of an otherwise rigid mantle surrounding the earth's fiery core. Convection makes molten material circulate slowly, dragging the earth's crust in its wake. As tectonic plates collide and pull apart, three kinds of rock are formed.

Sedimentary rocks consist of material eroded by wind, water or glacial ice and subsequently deposited in layers on land or in water. Such rocks include sandstone, limestone and shale.

Igneous rocks are created when molten rock cools and solidifies on or near the earth's surface. The continents and the ocean basins are largely formed of igneous rocks overlain by layers of sedimentary rock.

Metamorphic rocks are created when plate movements drive igneous or sedimentary rock masses deep into the lower portions of the earth's crust. There, pressures and temperatures hundreds of times those at the earth's surface cause the rock to melt and recrystallize, transforming sandstone to quartzite, limestone to marble and shale to slate.

Over time, eroded material from igneous rocks forms sedimentary rocks, which in turn are subducted by tectonic plate movements deep below the earth's crust. There the rocks melt into magma, eventually rising to form igneous formations in the crust.

CANADA'S GEOLOGICAL PROVINCES

Canada comprises 17 geological provinces divided into four major categories based on dominant bedrock type; shield, orogen, platform and shelf.

The Precambrian Shield covers most of eastern and north-central Canada in a broad band around Hudson Bay. It includes seven geological provinces, three of which — Superior, Slave and Nutak — were deformed during the Archean Eon and contain the oldest continental crust known in Canada, ranging from 2.5 to over 3 billion years in age. The Churchill, Southern and Bear provinces embrace ancient mountain belts produced 1.75 billion years ago. An earlier Proterozoic mountain-building episode about 1 billion years ago deformed the Grenville province.

In late Precambrian time (about 900 million years ago), the shield was worn down by erosion. During the succeeding Paleozoic and Mesozoic eras, the sea encroached onto the shield, depositing sediments later stripped away by erosion. The shield has a characteristically hummocky surface and is low-lying, except along its eastern margin in Labrador and around Baffin and Ellesmere islands.

The Appalachian, Cordilleran and Innuitian orogens are mountain belts of deformed and variously metamorphosed sedimentary and igneous rocks, mainly of Phanerozoic age (less than 1 billion years old), intruded by great masses of granite. Although the orogens mark sites of plate collision, they are of different ages and varying origin. The Appalachians, for example, were formed by the closure of a Paleozoic ocean basin. The continental plates later separated, forming the Atlantic Ocean while leaving a remnant of the Appalachians in Northwest Europe.

The St. Lawrence, Interior, Arctic and Hudson platforms are thick, flat-lying Phanerozoic strata covering large parts of the Canadian Shield. The Interior Platform is a vast flatland extending west from the edge of the Shield to the foothills of the Rocky Mountains.

The geologically youngest provinces, the submarine Atlantic, Pacific and Arctic continental shelves, are formed of deformed sediments chiefly of Mesozoic and Cenozoic age. These are still accumulating along the margins of the continental mass.

1.4 PHYSICAL FEATURES

INLAND WATERS

Each year millions of tonnes of water fall on the land as rain and snow. Some of this water evaporates; some is stored in lakes, groundwater reservoirs and glaciers; but much more runs off into rivers or streams to the oceans. The Atlantic and Pacific coastal regions get the most precipitation (100-140 cm), followed by Ontario and Quebec (65-90 cm) and the semi-arid Prairie region (40-55 cm). Canada's northland receives the least precipitation (15-40 cm).

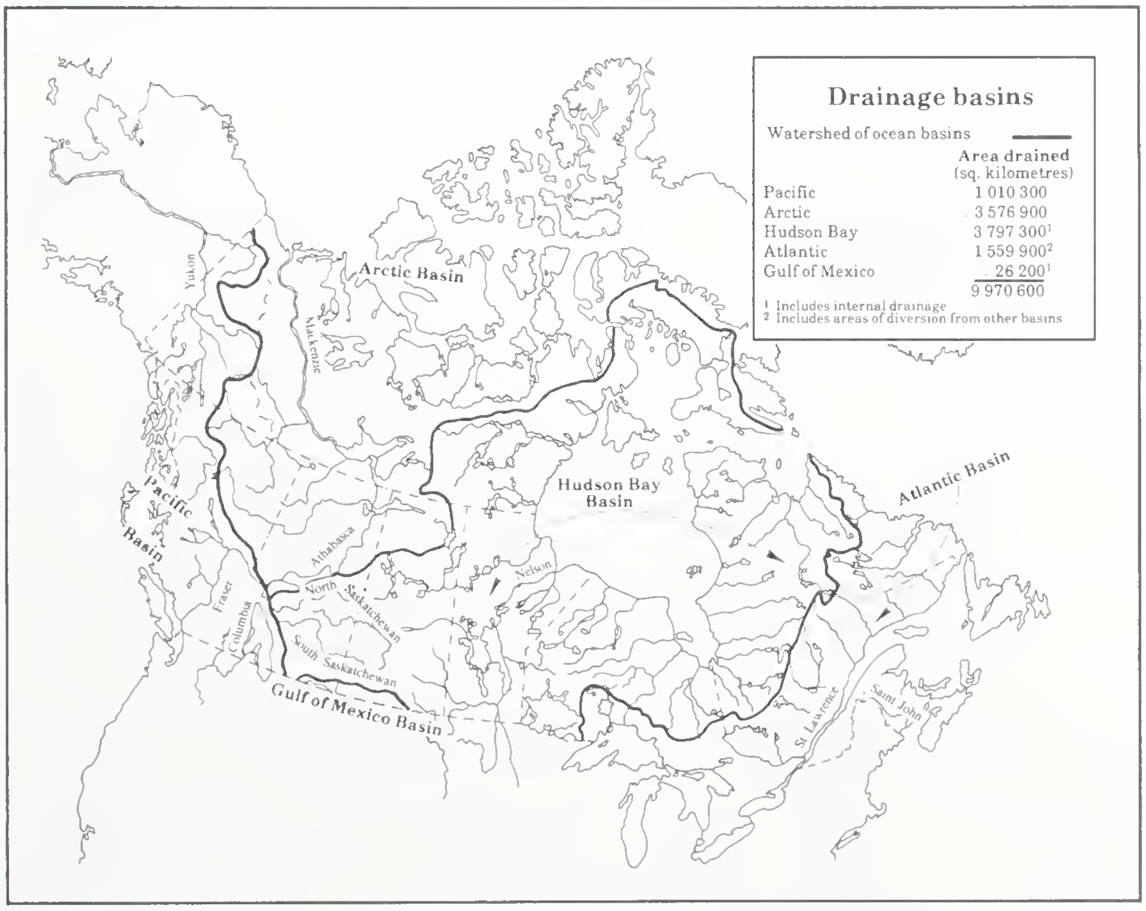
About 30% of Canada's annual precipitation falls as snow, much of which stays frozen until spring. This blanket of snow is vital for maintaining soil moisture; it is also used by countless Canadians for skiing and other sports. When this snow begins to melt, some rivers flood their banks.

Despite abundant water in southern Canada, certain areas of the country are inadequately supplied — the Prairies, for example. These areas are dry because they receive little rainfall and because almost half of Canada's river water flows northward. At times, such as in 1988, summer drought causes hardship for many farmers.

George Hollister/National Archives of Canada/PA 147956

Niagara Falls scene from 1865.

Map 1.2
DRAINAGE BASINS


Drainage basins
Watershed of ocean basins
Area drained (sq. kilometres)
Pacific 1 010 300
Arctic 3 576 900
Hudson Bay 3 797 300¹
Atlantic 1 559 900²
Gulf of Mexico 26 200¹
9 970 600
¹ Includes internal drainage
² Includes areas of diversion from other basins
Arctic Basin
Hudson Bay Basin
Atlantic Basin
Pacific Basin
Gulf of Mexico Basin
Yukon
Mackenzie
Athabasca
North Saskatchewan
South Saskatchewan
Nelson
Fraser
Columbia
St. Lawrence
Saint John

About 7.6% of Canada is covered by lakes and rivers, making surface water the source of 90% of freshwater for Canadians. (See Table 1.1.) The remainder comes from groundwater.

Lakes naturally regulate river flow; they smooth out peaks during flooding and sustain streamflow during dry seasons. The Great Lakes are among the largest freshwater bodies in the world, spanning almost 250 000 km^2, 36% in Canada and 64% in the United States. (See Table 1.3.) (Sizes and elevations of other large Canadian lakes are listed in Table 1.4.)

Groundwater and alpine glaciers contribute to streamflow. Particularly in the Prairies, groundwater is the principal source of streams during extended dry periods. In the hot summer months, glaciers contribute up to 25% of the flow of the Saskatchewan and Athabasca rivers.

The main measure of a country's water supply is its renewable streamflow. Annually, Canada's rivers discharge roughly 105 000 m^3 per second, nearly 9% of the world's renewable water supply and about 60% of Canada's mean annual precipitation. (Table 1.5 lists Canada's principal rivers.)

ST. LAWRENCE SEAWAY

The St. Lawrence Seaway is a system of locks, canals and channels created to link the Great Lakes to the Atlantic Ocean.

Construction began in 1783 and the Seaway was officially opened in 1959. The waterway extends 3 790 km from the Atlantic Ocean to the northern tip of Lake Superior and ships can be elevated 100 metres over a 43-kilometre distance. The St. Lawrence segment of the Seaway originally cost Canada $330 million and the United States $130 million. The Welland Canal cost an additional $300 million.

The Seaway is a vital part of the Canadian economy, allowing direct, energy-efficient transport of materials such as iron ore, grain and coal. In 1989, more than 77 million tonnes of cargo moved through the canal system.

National Archives of Canada/C-45356

Opening of the Welland Ship Canal, 1932.

Nearly half of the 8 900 km boundary between Canada and the United States (including Alaska) lies along or across water bodies. Drainage basins along the border are economically important to both countries.

The **Atlantic** drainage basin is dominated by the Great Lakes–St. Lawrence system, which carries ocean-going vessels into the heart of North America and is one of the world's largest single freshwater reserves. These lakes are so vast they can absorb large variations in flows while maintaining uniform outflows.

The **Hudson Bay** drainage basin is the largest in area, but sparse rainfall in its western region places it behind the Atlantic drainage in river flow. This basin supports agriculture to the west and hydroelectric development on the rivers surrounding Hudson Bay.

The mighty Mackenzie, one of the world's longest rivers, dominates the **Arctic** drainage basin. The river flows from the head of the Finlay River to the Arctic Ocean, draining an immense area in the three western provinces and the northern territories. Except for a 26 km portage in Alberta, barge navigation is possible from Fort McMurray on the Athabasca River to the mouth of the Mackenzie, a distance of 2 700 km.

Rivers in the **Pacific** drainage basin rise in the mountains of the Cordilleran region and flow to the Pacific Ocean through steep canyons and over innumerable falls and rapids. These rivers provide power for large hydroelectric developments and, in season, swarm with salmon returning inland to their spawning grounds.

Uses of inland water Dams built across large rivers have met the major share of Canada's electric energy needs in the past, and still accommodate two-thirds of electrical needs today. Inland waters are also important for recreation, transportation, wildlife and fisheries.

The most important uses of freshwater are: thermal electric generation (for cooling), 52%; manufacturing, 27%; agriculture, 8%; and the mineral industry, 2%. The remaining 11% goes to municipal use. In manufacturing and mining, water is used more than once before being returned to its source. In agriculture, most of the water used is not returned to its source.

COASTAL WATERS

Canada's nearly 244 000 km of coastline on the mainland and on offshore islands is the world's longest.

Atlantic Over time, the sea along the Atlantic Coast has inundated valleys, lower portions of the Appalachian Mountains, and the Canadian Shield. The width of the submerged continental shelf varies from 60 to 280 nautical miles, and the outer edge varies in depth from 183 to 366 m. The overall gradient of the Atlantic continental shelf is slight, but it is studded with shoals, plateaus, banks, ridges and islands. The 73 m line, the danger line for shipping, is an average of 12 nautical miles from the Nova Scotia coast. Deep channels and gullies cut into the shelf. Large areas undergo constant change because of continuous deposit of materials eroded by rivers, wave action, wind and ice.

Hudson Bay and Hudson Strait Hudson Bay is a shallow inland sea 822 324 km^2 in area with an average depth of about 128 m, and a maximum depth in the centre of the Bay of 258 m. Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 796 km long and from 69 to 222 km wide; its greatest depth of 880 m is close inside the Atlantic entrance. While great irregularities in the seafloor exist, there are few navigational hazards, except in inshore waters.

Pacific The marginal sea of the Pacific differs strikingly from other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief — a repetition of the mountain landscape. Numerous inlets penetrate the mountainous coasts for distances of 93 to 139 km; these are usually a nautical mile or two wide with deep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 nautical miles to its limit at depths of about 366 m. The seafloor drops rapidly from the western slopes of Vancouver Island and the Queen Charlotte Islands. These detached land masses are the dominant features of the Pacific marginal sea. Numerous shoals and pinnacle rocks necessitate cautious navigation.

Arctic To the north of Canada is part of the great continental shelf surrounding the Arctic Ocean. On this submerged plateau lie Greenland, all the Arctic islands of Canada, and most of the Arctic islands of Europe and Asia.

The floor of the submerged continental margin varies from nearly flat to gently undulating, with isolated rises and hollows. Most of it slants seaward, with an abrupt break at the outer edge to the continental slope. From the Alaskan border to the mouth of the Mackenzie River, the shelf is shallow; its outer edge is 40 nautical miles offshore at a depth of about 64 m. Near the western edge of the Mackenzie River delta, the shelf is indented by the deep Mackenzie Trough (formerly referred to as the Herschel Sea Canyon) the head of which comes within 15 nautical miles of the coast. The submerged portion of the Mackenzie Delta forms a great pock-marked undersea plain, most of it less than 55 m deep. This plain is 250 miles long and up to 75 nautical miles wide. North and east of it, the continental shelf is more deeply submerged. Most of the well-defined continental shoulder is over 549 m deep; this gives way to a smooth continental slope extending to the Canada Basin at about 3 658 m.

The deeply submerged continental shelf runs along the entire West Coast of the Canadian Arctic Archipelago from Banks Island to Greenland. Major channels between the islands have flat floors at about the same depth as the shelf. Local irregularities may be the result of glacial action. The only deep indentation is a sinuous canyon that heads off Robeson Channel close to Greenland. A series of steps marks the submerged sides of the Archipelago channels, and the slopes on the islands' western shores.

ISLANDS

In the North, Canada's largest islands lie within the Canadian Arctic Archipelago, extending from the islands in James Bay to Ellesmere Island, which reaches 83° 07′N. With an area of 507 451 km^2 , Baffin Island is Canada's largest island.

The largest West Coast islands are Vancouver Island and the Queen Charlotte Islands; but the coastal waters are studded with many smaller rocky islands. On the East Coast, the largest islands are the Island of Newfoundland, Prince Edward Island, Cape Breton Island, Grand Manan and Campobello islands of New Brunswick, and Anticosti Island and the Îles de la Madeleine of Quebec.

Notable islands in inland waters include Manitoulin Island in Lake Huron, the Thirty Thousand Islands of Georgian Bay, and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River. (The surface areas of major islands are given by region in Table 1.6.)

1.5 GOVERNMENT SURVEYS, MAPPING AND REMOTE SENSING

Energy, Mines and Resources Canada (EMR) is the federal department responsible for collecting and analyzing data on Canada's diverse land forms. The Department's Surveys, Mapping and Remote Sensing Sector produces reliable surveys, maps, remotely-sensed data and geographic information covering the Canadian landmass. The sector promotes the development of geographic information technologies and of related expertise in government, academia and private industry. As a world leader in geomatics, the sector helps to develop Canada's economy and international trade.

The **Canada Centre for Surveying** is a world leader in satellite positioning and other state-of-the-art techniques. Its geodetic survey division recently completed a new reference system that will offer a precise positional framework for all other forms of surveying. Its legal surveys division oversees surveys throughout Canada, and is now implementing an automated multipurpose land information system.

The **Canada Centre for Mapping** has converted the 917 topographic maps that cover the country at a scale of 1:250 000 (0.4 cm to 1.0 km) to digital form, making Canada one of the first countries to have complete digital coverage. Over 85% of the country has also been mapped at a larger scale 1:50 000 (2 cm to 1 km) and digitizing of these maps is well under way. The Centre also has a data base on the status, origin and location of nearly 500,000 physical features and populated places in Canada.

EXPLORING CANADA

Mapping and surveying have been closely tied to the exploration, settlement and development of Canada. By 1867, much of Canada's territory had been mapped by countless explorers, surveyors and cartographers.

In the early years of Confederation, the new Dominion of Canada was defined by boundary markers and maps. Surveys determined the location of the 49th parallel, the boundary dividing Canada from the United States, and set the borders for new territories.

Some of this surveying had immediate benefits; for example, the rapid settlement of the Prairies was possible partly because most homesteading lots had been surveyed and marked before settlers arrived.

Mapping and surveying were revolutionized by the use of aircraft in the 1920s and of satellites in the 1960s. These new mapping tools led to the birth of remote sensing, a technology which gathers information about the earth's surface using electro magnetic waves.

FRANCE
GOLFE OF CANADA
NEW
LANDE

National Archives of Canada/NMC 8842

New France, 1623.

The **Canada Centre for Remote Sensing** works to improve remote sensing technology and to develop applications of satellite and airborne systems, including synthetic aperture radar. Canada has an excellent worldwide reputation as a supplier of remote sensing products and services. The Centre is working on the ground system and applications for Canada's RADARSAT satellite, scheduled for launch in 1994. The Centre also operates two receiving stations to help acquire satellite data.

1.6 PROTECTING CANADA'S HERITAGE

ENVIRONMENT CANADA

As the federal environmental agency, Environment Canada works to achieve a balance between the needs of society and the long-term viability of natural ecosystems. In the 1990s, the agency faces a number of major challenges.

Toxic substances, especially those that do not readily degrade in the environment, can have a cumulative effect on all living things, including humans.

The Canadian Environmental Protection Act (CEPA), proclaimed on June 28, 1988, is a framework for protecting Canadians from pollution caused by toxic substances. CEPA consolidates the Environmental Contaminants Act, the Canada Water Act, Part III, the Clean Air Act, the Ocean Dumping Control Act and Section 6(2) of the Department of the Environment Act (1979).

CEPA requires that industries and government deal responsibly with the thousands of toxic substances used in products sold in Canada, and with the hundreds of sources of toxic discharges. The legislation improves the federal government's ability to manage use of toxic chemicals by improving enforcement methods and making punishment of polluters tougher.

Acid rain, caused by emissions of sulphur dioxide (SO_2) and nitrogen oxide, causes serious damage to lake and forest ecosystems. To solve Canada's acid rain problem, deposition of wet sulphate in all vulnerable areas in Eastern Canada must be reduced by about half. Achieving this objective requires that Canadian SO_2 emissions east of the Saskatchewan/Manitoba border be reduced to 2.3 million tonnes annually while annual flows of SO_2 from the US into Canada be reduced to about 2 million tonnes.

On October 27, 1990, several amendments to the US Clean Air Act were passed, including provisions to meet this acid rain reduction target. The Canadian Acid Rain Abatement Program, established in 1985, had by 1990 reduced SO_2 emissions by 40%; by 1994, emissions will have dropped 50% from 1980 levels. A permanent Canadian SO_2 emission ceiling of 3.2 million tonnes for the year 2000 has been agreed upon by federal and provincial environment ministers.

A Canada–US agreement dealing with shared problems of transboundary air pollution is currently being negotiated.

Ozone layer depletion leads to increased ultraviolet radiation, which has been linked to skin cancer, crop damage and premature aging of various materials. Ozone depletion is caused by emissions of chlorofluorocarbons (CFCs) and other long-lived chlorine and bromine containing chemicals.

Ozone depletion has been detected in Canada. Over Toronto, for example, total ozone declined by approximately 4% between 1975 and 1987, and by 6% to 8% from 1965 to 1990.

An important participant in the international effort to address this global problem, Canada hosted the meeting resulting in global controls on ozone-depleting substances — the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. Canada also helped strengthen this Protocol at a 1990 meeting in London, England. The world's major CFC users have agreed to eliminate production and consumption by the year 2000; Canada is committed to achieving this by 1997. As of July 1990, Canadian reductions were 19%, well ahead of the schedule of the Montreal Protocol.

WORLD HERITAGE SITES IN CANADA

Canada has no fewer than 10 World Heritage Sites that rank with the pyramids of Egypt, the Galapagos Islands, and the ancient city of Damascus in Syria. They have been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO), which by 1987 had carefully reviewed and designated only 338 such sites in the world.

The sites fall into two categories: natural and cultural. In Canada, natural sites include:

- ***Kluane National Park**, in the Yukon, known for some of the world's largest ice fields outside polar regions and a spectacular range of mountain environment;*
- *The **Canadian Rocky Mountain Parks** (and three BC provincial parks) in Alberta and British Columbia, which hold significant fossil sites, lakes and river systems, and some 360 animal and bird species;*
- *The desert badlands of **Dinosaur Provincial Park**, Alberta, with their stunning deposits of Upper Cretaceous dinosaur fossils;*
- ***Wood Buffalo National Park**, in Alberta and the Northwest Territories, with the largest undisturbed meadows left in North America, one of the world's finest inland river deltas, salt plains, and endangered bison, crane and falcon species;*
- ***Nahanni National Park**, Northwest Territories, with nearly 5 000 square kilometres (km²) of wilderness, including the South Nahanni watershed and canyon system, tundra-capped mountains, caves and the spectacular, 90-metre Virginia Falls, twice the height of Niagara Falls.*

The cultural sites include:

- ***Anthony Island** (South Moresby), in British Columbia, for its Haida Indian totem poles and mortuary columns in Ninstits Village — one of the most impressive and remarkable Coastal Indian sites in the Pacific Northwest;*
- ***Gros Morne National Park**, Newfoundland, for evidence of human cultural history from the Stone Age Maritime Archaic tradition, through Dorset Eskimo, to visits by Norse seafarers, French and Basque whalers, Jacques Cartier, and Captain James Cook;*
- ***L'Anse aux Meadows National Historic Park**, Newfoundland, since it is the site of the oldest known European settlement in the New World, a Viking colony dating to the 11th century and the legendary Norseman Leif Eriksson;*
- ***The Historic District of Quebec**, as the best remaining example in North America of original walled fortifications from the 17th, 18th and 19th centuries;*
- ***Head-Smashed-In Bison Jump**, Alberta, as the oldest and best-preserved bison jump in North America, probably used by native people to hunt bison as early as 8000 B.C.*

Natural World Heritage Sites are outstanding examples of major stages in the earth's evolution; of ongoing geological processes, biological evolution, or man's interaction with nature; or of the foremost natural habitats of threatened animal or plant species.

Cultural sites meet tests of authenticity for unique artistic or creative masterpieces; long-time influence over a cultural area of the world; unique testimony to a lost civilization; outstanding examples of human cultural settlements; or tangible association with events or ideas of universal significance.

Canada played a major role in setting up the World Heritage Convention, which outlines how sites are chosen, sets up a site preservation fund for 115 member states, and promotes heritage conservation worldwide.

B.C. Heritage Conservation Branch

Totem pole on Anthony Island (South Moresby), British Columbia.

In the 1990s, managing **water resources** will become as important as managing energy. Some of the major issues include: growing imbalances between water supply and demand, especially on the Prairies; inadequate water quality in parts of the country; proposals for major water diversions in Canada; export to the United States; and water use agreements among the provinces and territories.

The final report of the Inquiry on Federal Water Policy — the first comprehensive assessment of the government's role in managing water resources — was published in 1985. Following extensive consultations on the report's recommendations, a new federal water policy was released in 1987. The Policy emphasized that realistic pricing can help control demand and reduce waste.

Climate change occurs as deforestation, land-use changes, industrial processes and the burning of fossil fuels increase the concentrations of so-called "greenhouse" gases in the atmosphere. Carbon dioxide (CO^2) is the most abundant of these climate-controlling gases; half the CO^2 emitted in human history has been emitted in the last 30 years, and emissions continue to rise 4% per decade.

Waterfowl and Wetland Conservation A plan to manage North American wetland habitat was signed by Canada's Federal Environment Minister and the US Secretary of the Interior in May 1986. The North American Waterfowl Management Plan (NAWMP) proposes a far-reaching $1.5 billion management agreement to be undertaken jointly by private and public interests in Canada and the United States. This agreement will bring seriously declining waterfowl populations back to the level of the 1970s, when the average fall migration was about 100 million birds.

NAWMP will be implemented over a 15-year period. It seeks to restore the mid-continental habitat of mallard and pintail ducks by protecting and improving 1.5 million hectares of waterfowl habitat in Canada and the United States. Additional wetlands will be protected along the lower Mississippi River and the Gulf Coast, on the Pacific Coast, and in California's Central valley. Other projects will protect black duck habitat in Eastern Canada and on the East Coast of the United States. The first waterfowl habitat enhancement and protection project under NAWMP was established in the Quill Lakes area of Saskatchewan in 1988.

Sustainable development The maintenance of a strong economy is directly related to the health of the environment. In Canada, over 40% of the Gross Domestic Product, 32% of the labour force and 52% of exports depend directly on economic activities based on the environment.

Intense resource use and poor waste management can create serious health risks, constraining economic development. Recognizing this, the federal government is committed to sustainable development — enhanced economic productivity that maintains a healthy environment. The 1986 Federal Environmental Quality Policy Framework has strengthened and streamlined federal environmental quality actions, and has emphasized the need to incorporate environmental decisions into economic planning and decision-making.

Environment Canada's role in promoting sustainable development includes establishing conservation strategies as development "blueprints"; building a sound base of environmental knowledge; providing information on environmentally-sound development; influencing federal programs so that environmental objectives are achieved along with economic ones; and developing policies, methods and tools to help make sustainable development a reality.

State of the environment reporting Since 1986, Environment Canada and Statistics Canada have jointly established a State of the Environment (SOE) reporting system. In June 1988, the Canadian Environmental Protection Act made SOE reporting a legislative requirement.

Systematic environmental reporting will build a reliable bank of information on natural resource use and environmental quality. It will also make it possible to develop ways of measuring progress in dealing with environmental problems, to identify emerging issues, and to encourage the sustainable use of natural resources.

The system will include a national report issued every five years; occasional reports and fact sheets on high-profile environmental issues; help to federal departments in preparing sectoral reports; and a publicly-accessible SOE data base.

OZONE LAYER

Canada is a key player in the global effort to protect the ozone layer — a fragile band of gases in the upper atmosphere that absorbs most of the sun's harmful ultraviolet rays.

In 1985, a major thinning — or "hole" — in this protective layer was discovered by British scientists. This "hole," just over the south pole appears every spring and seems to be growing steadily. In 1986, Environment Canada scientists discovered a similar, but smaller "hole" over the north pole. A slight thinning of the entire global ozone layer has also been noted.

Even the relatively small amounts of harmful ultraviolet radiation currently reaching the earth can cause skin cancer and eye damage, weaken the human immune system, reduce crop yields and harm aquatic life. Thus, the depletion of the earth's ozone threatens to increase the earth's exposure to this radiation, endangering human health and the world's food supply.

The main culprits in ozone depletion are the so-called CFCs — a group of chemicals used mostly in refrigeration, air conditioning and foam packaging. (CFCs were once widely used in spray-can products — such as hair spray and deodorant — as a propellant to help force out the contents. But in 1980, Canada banned the main propellant uses.) Other industrial chemicals suspected of damaging ozone include halons — used in fire extinguishers — and the solvents carbon tetrachloride and methyl chloroform.

Scientists believe these chemicals drift to the upper atmosphere where they break apart, releasing ozone-destroying agents. CFCs, for example, release chlorine when they break down — and a single chlorine molecule can destroy thousands of ozone molecules. The problem is made worse by the fact that CFCs can stay in the atmosphere anywhere from 70 to 100 years. As a result, almost all CFCs ever released are still in the atmosphere, drifting slowly up to the ozone layer — which is situated 10 km to 50 km above the earth's surface and is 20 km thick. A secondary concern is that CFCs also increase the greenhouse effect, which causes global warming.

An irony in this situation is that the ozone that exists as air pollution at ground level, especially in city smog, can not be moved to the upper atmosphere where it is required.

Concern about the ozone layer dates to the early 1970s, with the pending use of supersonic passenger planes destined to fly high in the upper atmosphere, leaving trails of ozone-damaging exhaust. However, since upper-atmosphere travel was never fully realized, the threat proved transitory. Other very high-flying vehicles — such as some military aircraft and spacecraft — are not a threat yet, because they are not used heavily.

With concern rising about the thinning global ozone layer and the ozone "holes" discovered in 1985 and 1986, Canada has played a key role in developing international agreement on CFCs use. In 1987, 24 countries — including Canada — signed the Montreal Protocol on Substances that Deplete the Ozone Layer. The agreement called for the freezing of CFCs use to 1986 levels and the reduction of these levels by 50% by 1999.

In 1990, Canada was the first country to sign the updated and strengthened protocol, requiring the phase-out of CFCs by the year 2000 and of the other most-damaging chemicals by 2005. Canada has accelerated this timetable and will eliminate CFCs by 1997 and other ozone-destroyers by 2000, except for essential uses.

Substitute chemicals to replace CFCs, called HCFCs, cause 95% less damage to the ozone layer and are expected to be widely used. However, given they still cause some ozone damage, HCFCs can only be considered temporary substitutes.

To monitor future ozone levels in the upper atmosphere, Environment Canada's Atmospheric Environment Service has designed the world's most accurate device for measuring ozone — the Brewer Ozone Spectro-photometer. The device has been used to upgrade the worldwide network of ozone-measuring stations and will provide valuable information for years to come.

S.T. Thompson/National Archives of Canada/PA-149197

The Lakes in the Clouds, British Columbia, 1903.

NATIONAL PARKS AND HISTORIC SITES

Both the federal and provincial governments recognize that Canada's outstanding natural areas need to be preserved. Accordingly, 39 land regions and 29 marine regions have been identified as representative of Canada's physical, biological and oceanographic characteristics. Over time, the federal government will establish a national park in each of these natural regions. Canada's national parks system, encompassing more than 180 000 km^2, is already one of the largest in the world.

The first national park was established in the Rocky Mountains near Banff in 1885. Since then, the parks system has been extended to include at least one national park in each province and territory. These parks represent 22 terrestrial regions and 2 marine regions. Eighty national historic parks and historic sites have also been created, while more than 1,000 persons and events of national significance have been commemorated with plaques or distinctive monuments. In addition, several provinces and the territories are participating with the federal government in a co-operative program to give national recognition and protection to rivers and waterways that are particularly significant ecologically, that offer outstanding recreation, or that have historical importance.

About 20 million visits a year are recorded in the national parks. (See Table 1.7 for more information on the national parks.)

Amendments to the National Parks Act were proclaimed in September 1988. Among the major changes were significantly increased fines and penalties for poaching, authority to establish and manage National Marine Parks, a legislative requirement to prepare park management plans, and the establishment of Ellesmere Island National Park Reserve.

Provincial parks The provinces have also established parks. Some are wilderness areas left in their natural state, but the majority are smaller scenic areas, easily accessible and equipped with camping and picnic facilities.

Sources

Energy, Mines and Resources Canada.
Environment Canada.
Statistics Canada.
Provincial Government Departments.

FOR FURTHER READING

Selected publications from Statistics Canada

A wide range of Canadian geographic information and documentation is available. The *National Atlas of Canada* and the *Gazetteer of Canada* series are produced by the Canada Centre for Mapping. Maps, aeronautical charts and air information publications may be purchased from the Canada Map Office. Reproductions of federal aerial photographs as well as custom reproductions, mosaics, microfilm, colour transparencies of selected LANDSAT images and photomaps of certain parts of the country can be obtained from the National Air Photo Library. New types of products such as videodiscs containing maps in analogue form and image maps combining satellite imagery and topographic data are available through the Cartographic Information and Distribution Centre.

- *Canada: A Portrait,* biennial. 11-403.
- *Human Activity and the Environment: A Statistical Compendium*, 1986. 11-509
- *Toronto 150: Portrait of a Changing City*, 1984. 11-605
- *In the Footsteps of Jacques Cartier: 450 Years Later: A Statistical Portrait*, 1984. 11-606
- *Trois-Rivières: A Metropolitan Profile*, 1984. 11-607
- *Historical Statistics of New Brunswick*, 1984. 11-608
- *1986 Census Geography: A Historical Comparison*, 1988. 99-106
- *Maps, Census Division and Subdivisions, 1986 Census*, 1987. 99-115
- *Maps, Census Metropolitan Areas and Census Agglomerations, 1986 Census*, 1987. 99-116

TABLES

LEGEND

. .	*not available*	*e*	*estimate*
. . .	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

1.1 LAND AND FRESHWATER AREAS, BY PROVINCE

Province or territory	Land km^2	Freshwater km^2	Total km^2	Percentage of total area
Newfoundland	371 690	34 030	405 720	4.1
Prince Edward Island	5 660	—	5 660	0.1
Nova Scotia	52 840	2 650	55 490	0.6
New Brunswick	72 090	1 350	73 440	0.7
Quebec	1 356 790	183 890	1 540 680	15.5
Ontario	891 190	177 390	1 068 580	10.7
Manitoba	548 360	101 590	649 950	6.5
Saskatchewan	570 700	81 630	652 330	6.5
Alberta	644 390	16 800	661 190	6.6
British Columbia	929 730	18 070	947 800	9.5
Yukon	478 970	4 480	483 450	4.8
Northwest Territories	3 293 020	133 300	3 426 320	34.4
Canada	9 215 430	755 180	9 970 610	100.0

1.2 PRINCIPAL HEIGHTS IN EACH PROVINCE AND TERRITORY, BY RANGE OR REGION

Province and height	Elevation m
NEWFOUNDLAND	
Torngat Mountains	
Mount Caubvick[1] (highest point in Nfld.)	1 622
Cirque Mountain	1 568
Mealy Mountains	
Unnamed peak (53°37' 58°33')	1 176
Kaumajet Mountains	
Bishops Mitre	1 113
Long Range Mountains	
Lewis Hills	814
Gros Morne	806
PRINCE EDWARD ISLAND	
Highest point	
Queen's County (46°20' 63°27')	142
NOVA SCOTIA	
Highest point	
Cape Breton Highlands (46°42' 60°36')	532
NEW BRUNSWICK	
Mount Carleton (highest point in NB)	820
Wilkinson Mountain	785
QUEBEC	
Monts Torngat	
Mont D'Iberville (highest point in Que.)	1 622
Les Appalaches	
Mont Jacques-Cartier	1 268
Mont Gosford	1 192
Mont Richardson	1 185
Mont Mégantic	1 105
Les Laurentides	
Unnamed peak (47°19' 70°50')	1 166
Mont Tremblant	968
Mont Sainte-Anne	800
Mont Sir-Wilfrid	783
Monts Otish	
Unnamed peak (52°19' 71°27')	1 135
QUEBEC (concluded)	
Collines Montérégiennes	
Mont Brome	533
ONTARIO	
Ishpatina Ridge (highest point in Ont.)	693
Ogidaki Mountain	665
Batchawana Mountain	653
Tip Top Mountain	640
Niagara Escarpment	
Blue Mountains	541
Osler Bluff	526
Caledon Mountain	427
MANITOBA	
Baldy Mountain (highest point in Man.)	832
Highest point in Porcupine Hills	823
Riding Mountain	610
SASKATCHEWAN	
Cypress Hills (highest point in Sask.)	1 468
Wood Mountain	1 013
Vermilion Hills	785
ALBERTA	
Rocky Mountains	
Mount Columbia (highest point on Alta.-BC boundary)	3 747
North Twin	3 733
Mount Alberta	3 620
Mount Assiniboine (on Alta.-BC boundary)	3 618
Mount Forbes	3 612
South Twin	3 581
Mount Temple	3 547
Mount Brazeau	3 525
Snow Dome (on Alta.-BC boundary)	3 520
Mount Lyell (on Alta.-BC boundary)	3 504
Mount Athabasca	3 491
Mount King Edward (on Alta.-BC boundary)	3 490
Mount Kitchener	3 490

1.2 PRINCIPAL HEIGHTS IN EACH PROVINCE AND TERRITORY, BY RANGE OR REGION (concluded)

Province and height	Elevation m
BRITISH COLUMBIA	
St. Elias Mountains	
Fairweather Mountain (highest point on Alaska-BC boundary)	4 663
Coast Mountains	
Mount Waddington	4 012
Rocky Mountains	
Mount Robson	3 954
Mount Columbia (on Alta.-BC boundary)	3 747
Mount Clemenceau	3 642
Mount Assiniboine (on Alta.-BC boundary)	3 618
Mount Goodsir: North Tower	3 581
Mount Goodsir: South Tower	3 520
Snow Dome (on Alta.-BC boundary)	3 520
Mount Bryce	3 507
Selkirk Mountains	
Mount Sir Sandford	3 522
Cariboo Mountains	
Mount Sir Wilfrid Laurier	3 520
Purcell Mountains	
Mount Farnham	3 481
Monashee Mountains	
Torii Mountain	3 429
YUKON	
St. Elias Mountains	
Mount Logan (highest point in Canada)	5 951
Mount St. Elias (on Alaska-Yukon boundary)	5 489
YUKON (concluded)	
Mount Lucania	5 226
King Peak	5 173
Mount Steele	5 067
Mount Wood	4 838
Mount Vancouver (on Alaska-Yukon boundary)	4 785
Mount Macaulay	4 663
Mount Hubbard (on Alaska-Yukon boundary)	4 577
NORTHWEST TERRITORIES	
Mackenzie Mountains	
Unnamed peak (61°52' 127°42') (highest point in NWT)	2 773
Mount Sir James MacBrien	2 762
Ellesmere Island	
Barbeau Peak	2 616
Baffin Island	
Mount Odin	2 147
Devon Island	
Summit Devon Ice Cap	1 920
Franklin Mountains	
Cap Mountain	1 577
Mount Clark	1 462
Pointed Mountain	1 405
Nahanni Butte	1 396
Banks Island	
Durham Heights	732
Victoria Island	
Unnamed peak	655

[1] *Mount Caubvick is also known as Mont D'Iberville in Quebec.*

1.3 ELEVATIONS, AREAS AND DEPTHS OF THE GREAT LAKES

Lake	Elevation[1] m	Length km	Breadth km	Maximum depth m	Total area km²	Area on Canadian side of boundary km²
Superior	184	563	257	405	84 243	29 888
Michigan	176	494	190	281	57 757	—
Huron	177	332	295	229	63 096	39 473
Erie	174	388	92	64	25 812	12 880
Ontario	75	311	85	244	19 001	10 388

[1] *Long-term mean 1860-1972; International Great Lakes Datum, 1955.*

1.4 ELEVATIONS AND AREAS OF PRINCIPAL LAKES[1] (EXCEEDING 600 KM^2)

Province and lake	Elevation m	Area km^2
NEWFOUNDLAND AND LABRADOR		
Melville Lake	tidal	3 069
Smallwood Reservoir	471	6 527
NOVA SCOTIA		
Bras d'Or Lake	tidal	1 099
QUEBEC		
Lac Bienville	426	1 249
Réservoir Cabonga	361	677
Lac à l'Eau-Claire	241	1 383
Réservoir Gouin	404	1 570
Réservoir Manicouagan	360	1 942
Lac Minto	168	761
Lac Mistassini	372	2 335
Réservoir Pipmuacan	396	978
Lac Saint-Jean	98	1 003
ONTARIO		
Lake Abitibi[2]	265	931
Big Trout Lake	213	661
Lake of the Woods[2] (total 4 472)		
Canadian part 3 150	323	3 150
Lake Nipigon	320	4 848
Lake Nipissing	196	832
Rainy Lake (total 932)		
Canadian part 741	338	741
Lac Seul	357	1 657
Lake Simcoe	219	744
Lake St. Clair (total 1 210)		
Canadian part 490	175	490
MANITOBA		
Cedar Lake	253	1 353
Cross Lake	207	755
Gods Lake	178	1 151
Island Lake	227	1 223
Lake Manitoba	248	4 624
Playgreen Lake	217	657
Southern Indian Lake	254	2 247
Lake Winnipeg	217	24 387
Lake Winnipegosis	254	5 374
SASKATCHEWAN		
Lake Athabasca[2]	213	7 935
Cree Lake	487	1 434
Doré Lake	459	640
Lac La Ronge	364	1 413
Peter Pond Lake	421	778
Reindeer Lake[2]	337	6 650
Wollaston Lake	398	2 681
ALBERTA		
Lake Clair	213	1 436
Lesser Slave Lake	577	1 168
BRITISH COLUMBIA		
Atlin Lake[2]	668	775
Williston Lake	671	1 761
YUKON TERRITORY		
Kluane Lake	409	781
NORTHWEST TERRITORIES		
Aberdeen Lake	80	1 100
Amadjuak Lake	113	3 115
Aylmer Lake	375	847
Baker Lake	2	1 887
Buffalo Lake	265	612
Clinton-Colden Lake	375	737
Contwoyto Lake	564	957
Lac de Gras	396	633
Dubawnt Lake	236	3 833
Ennadai Lake	311	681
Garry Lake	148	976
Great Bear Lake[3]	156	31 328
Great Slave Lake	156	28 568
Hottah Lake	180	918
Kamilukuak Lake	266	638
Kaminak Lake	53	600
Kasba Lake	336	1 341
Lac la Martre	265	1 776
MacKay Lake	431	1 061
Napaktulik Lake	381	1 080
Nettilling Lake	30	5 542
Nonacho Lake	354	784
Nueltin Lake[2]	278	2 279
Point Lake	375	701
Selwyn Lake	398	717
Tulemalu Lake	279	668
Wholdaia Lake	364	678
Yathkyed Lake	140	1 449

[1] *Excludes Great Lakes, see Table 1.3.*

[2] *Spans provincial or territorial boundary. Listed under province or territory containing larger portion.*

[3] *Largest lake wholly in Canada.*

1.5 LENGTHS OF PRINCIPAL RIVERS AND THEIR TRIBUTARIES

Drainage basin and river	Drainage area km^2	Length km
FLOWING INTO THE PACIFIC OCEAN		
Yukon (mouth to head of Nisutlin)		3 185
(International Boundary to head of Nisutlin)	323 800	1 149
Porcupine	61 400	721
Stewart	51 000	644
Pelly	51 000	608
Teslin	35 500	393
White	38 000	265
Columbia (mouth to head of Columbia Lake)		2 000
(International Boundary to head of Columbia Lake)	102 800	801
Kootenay	37 700	780
Kettle (to head of Holmes Lake)	4 700	336
Okanagan (to head of Okanagan Lake)	21 600	314
Fraser	232 300	1 370
Thompson (to head of North Thompson)	55 400	489
North Thompson	20 700	338
South Thompson (to head of Shuswap)	17 800	332
Nechako (to head of Eutsuk Lake)	47 100	462
Stuart (to head of Driftwood)	16 200	415
Skeena	54 400	579
Stikine	49 800	539
Nass	21 100	380
FLOWING INTO THE ARCTIC OCEAN		
Mackenzie (to head of Finlay)	1 805 200	4 241
Peace (to head of Finlay)	302 500	1 923
Smoky	51 300	492
Athabasca	95 300	1 231
Pembina	12 900	547
Liard	277 100	1 115
South Nahanni	36 300	563
Fort Nelson (to head of Sikanni Chief)	55 900	517
Petitot		404
Hay	48 200	702
Peel (mouth of west Channel to head of Ogilvie)	73 600	684
Arctic Red		499
Slave (from Peace River to Great Slave Lake)	616 400	415
Fond du Lac (to outlet of Wollaston Lake)	66 800	277
Back (to outlet of Muskox Lake)	106 500	974
Coppermine		845
Anderson		692
Horton		618
FLOWING INTO HUDSON BAY AND HUDSON STRAIT		
Nelson (to head of Bow)	892 300	2 575
(to outlet of Lake Winnipeg)	802 900	644
Saskatchewan (to head of Bow)	334 100	1 939
South Saskatchewan (to head of Bow)	144 300	1 392
Red Deer	45 100	724
Bow	26 200	587
Oldman	26 700	362
North Saskatchewan	12 800	1 287
Battle (to head of Pigeon Lake)	30 300	570
Red (to head of Sheyenne)	138 600	877
Assiniboine	160 600	1 070
Winnipeg (to head of Firesteel)	106 500	813
English	52 300	615
FLOWING INTO HUDSON BAY AND HUDSON STRAIT (concluded)		
Fairford (to head of Manitoba Red Deer)	80 300	684
Churchill (to head of Churchill Lake)	281 300	1 609
Beaver (to outlet of Beaver Lake)		491
Severn (to head of Black Birch)	102 800	982
Albany (to head of Cat)	135 200	982
Thelon	142 400	904
Dubawnt	57 500	842
La Grande-Rivière (Fort George River)	97 600	893
Koksoak (to head of Caniapiscau)	133 400	874
Nottaway (via Bell to head of Mégiscane)	65 800	776
Rupert (to head of Témiscamie)	43 400	763
Eastmain	46 400	756
Attawapiskat (to head of Bow Lake)	50 500	748
Kazan (to head of Ennadai Lake)	71 500	732
Grande rivière de la Baleine	42 700	724
George	41 700	565
Moose (to head of Mattagami)	108 500	547
Abitibi (to head of Louis Lake)	29 500	547
Mattagami (to head of Minisinakwa Lake)	37 000	443
Missinaibi	23 500	426
Harricana/Harricanaw	29 300	533
Hayes	108 000	483
aux Feuilles	42 500	480
Winisk	67 300	475
Broadback	20 800	450
à la Baleine	31 900	428
de Povungnituk	28 500	389
Innuksuac	11 400	385
Petite rivière de la Baleine	15 900	380
Arnaud	49 500	377
Nastapoca	13 400	360
Kogaluc	11 600	304
FLOWING INTO THE ATLANTIC OCEAN		
St. Lawrence River	839 200	3 058
Nipigon (to head of Ombabika)	25 400	209
Spanish	14 000	338
Trent (to head of Irondale)	12 400	402
Ottawa River	146 300	1 271
Gatineau	23 700	386
du Lièvre		330
Saguenay (to head of Péribonca)	88 000	698
Péribonca	28 200	451
Mistassini	21 900	298
Chamouchouane		266
Saint-Maurice	43 300	563
Manicouagan (to head of Mouchalagane)	45 800	560
aux Outardes	19 000	499
Romaine	14 350	496
Betsiamites (to head of Manouanis)	18 700	444
Moisie	19 200	410
St-Augustin	9 900	233
Richelieu (to mouth of Lake Champlain)	3 800	171
Churchill (to head of Ashuanipi)	79 800	856
Saint John	35 500	673
Little Mecatina	19 600	547
Natashquan	16 100	410

1.6 AREAS OF MAJOR[1] SEA ISLANDS, BY REGION

Region and island	Area km^2
BAFFIN ISLAND	507 451
QUEEN ELIZABETH ISLANDS	
Ellesmere	196 236
Devon	55 247
Axel Heiberg	43 178
Melville	42 149
Bathurst	16 042
Prince Patrick	15 848
Ellef Ringnes	11 295
Cornwallis	6 995
Amund Ringnes	5 255
Mackenzie King	5 048
Borden	2 794
Cornwall	2 258
Eglinton	1 541
Graham	1 378
Lougheed	1 308
Byam Martin	1 150
Île Vanier	1 126
Cameron	1 059
ARCTIC ISLANDS SOUTH OF QUEEN ELIZABETH ISLANDS (but north of the Arctic Circle)[2]	
Victoria	217 291
Banks	70 028
Prince of Wales	33 339
Somerset	24 786
King William	13 111
Bylot	11 067
Prince Charles	9 521
Stefansson	4 463
ARCTIC ISLANDS SOUTH OF QUEEN ELIZABETH ISLANDS (but north of the Arctic Circle)[2] (concluded)	
Richards	2 165
Air Force	1 720
Wales	1 137
Rowley	1 090
NORTHWEST TERRITORIES SOUTH OF THE ARCTIC CIRCLE	
Southampton (K)	41 214
Coats (K)	5 498
Mansel (K)	3 180
Akimiski (K)	3 001
Flaherty (K)	1 585
Nottingham (F)	1 372
Resolution (F)	1 015
PACIFIC COAST	
Vancouver	31 285
Graham	6 361
Moresby	2 608
Princess Royal	2 251
Pitt	1 375
ATLANTIC COAST AND GULF OF ST. LAWRENCE	
Newfoundland and Labrador	
Newfoundland (main island)	108 860
Gulf of St. Lawrence	
Cape Breton	10 311
Anticosti	7 941
Prince Edward	5 620
Bay of Fundy	
Grand Manan	137

F = Franklin District
K = Keewatin District

[1] *A major island has a land area greater than 130 km^2, a minor island less than that.*

[2] *There are no islands over 130 km^2 in the Yukon Territory.*

1.7 NATIONAL PARKS BY NAME AND YEAR ESTABLISHED

Park and year established	Area km^2	Location	Description
Banff 1885	6 640.8	Western Alberta, on east slope of Rocky Mountains	Scenic mountain area. Banff and Lake Louise resorts. Mineral hot springs. Summer and winter sports. Commercial accommodation. Campgrounds.
Yoho 1886	1 313.1	Eastern British Columbia, on west slope of Rockies	Mountain peaks, waterfalls and lakes. Yoho and Kicking Horse valleys. Commercial accommodation. Campgrounds.
Glacier 1886	1 349.4	Eastern British Columbia in the Selkirk Mountains	Alpine region, towering peaks, glaciers and forests. Climbing, ski touring, camping.
Waterton Lakes 1895	525.8	Southern Alberta, adjoining Glacier Park in Montana	Mountainous area with peaks and lakes. Commercial accommodation. Campgrounds.
Jasper 1907	10 878.0	Western Alberta, on east slope of Rockies	1 000 km of trails. Icefields, lakes. Mineral hot springs. Summer and winter sports. Commercial accommodation. Campgrounds.
Elk Island 1913	194.3	Central Alberta	Fenced preserve with large herds of buffalo, deer, elk and moose. Summer and winter sports. Campgrounds.
Mount Revelstoke 1914	262.6	Eastern British Columbia, on west slope of Selkirks	Mountain-top plateau, alpine meadows and mountain lakes. No campgrounds.
St. Lawrence Islands 1914	4.1	St. Lawrence River between Brockville and Kingston, Ont.	Mainland area and 17 islands among the Thousand Islands. Accessible by boat from mainland points. Campgrounds.
Point Pelee 1918	15.5	On Lake Erie, south-western Ontario	Wildlife. Beaches, marsh area, southern flora, nature trails. Staging ground for migratory birds.
Kootenay 1920	1 377.9	Southeast British Columbia, on west slope of Rockies	Includes section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Commercial accommodation nearby. Campgrounds.
Wood Buffalo 1922	44 807.0	Alberta and Northwest Territories	Forests and open plains. Mainly a wildlife sanctuary. Largest herds of free roaming bison in world. Accessible from Fort Smith, NWT. Campgrounds.
Prince Albert 1927	3 874.6	Central Saskatchewan	Forest region. Lakes and streams. Summer and winter recreation. Commercial accommodation. Campgrounds.
Riding Mountain 1929	2 975.9	Southwest Manitoba	Wildlife sanctuary on escarpment. Lakes. Commercial accommodation. Campgrounds. Summer and winter recreation.
Georgian Bay Islands 1929	14.2	In Georgian Bay, near Honey Harbour, Ont.	Accessible by boat. Unusual geological formations on Flowerpot Island. Campgrounds. Picnic areas.
Cape Breton Highlands 1936	950.5	Northern Cape Breton Island, NS	Rugged Atlantic coastline. Fine seascapes. Commercial accommodation. Campgrounds.
Prince Edward Island 1937	18.1	North shore, Prince Edward Island	Tennis, golf, bathing beaches. Commercial accommodation. Campgrounds.
Fundy 1948	205.9	On Bay of Fundy in New Brunswick	Forested region, wildlife, rugged terrain. Commercial accommodation. Campgrounds. Winter and summer recreation.

1.7 NATIONAL PARKS BY NAME AND YEAR ESTABLISHED (concluded)

Park and year established	Area km^2	Location	Description
Terra Nova 1957	396.5	On Bonavista Bay, Nfld. North of St. John's	Maritime area, rocky headlands and forests. Sport fishing. Commercial accommodation. Campgrounds.
Kejimkujik 1968	381.5	South-central Nova Scotia	Inland park. Lakes and rivers. Hiking, canoeing, campgrounds, swimming, interpretation program, picnic areas. Historic Micmac Indian petroglyphs.
Kouchibouguac 1969	238.8	100 km north of Moncton, NB	Sheltered from the sea by a 25 km sweep of sand dunes. Rivers and lagoons invite explorers in canoes, rowboats or kayaks.
Pacific Rim (Reserve) 1970	499.6	306 km northwest of Victoria, BC	Ocean meets rain forest and sandy beaches at Park. Surfing. Hiking through the mighty forest.
Forillon 1970	240.4	724 km northeast of Quebec City, Que.	Steep limestone cliffs off the Gaspé coast plunge into the Gulf of St. Lawrence at the Park. Walking and hiking trails.
La Mauricie 1970	543.9	200 km northeast of Montreal, Que.	Rolling hills, lakes and fast-running rivers. Canoe routes with wilderness campgrounds and areas for tents and recreational vehicles. Beaches, lookouts and walking trails.
Kluane (Reserve) 1972	22 015.0	158 km west of Whitehorse, YT (on the Alaska Highway)	Sitting on Canada's westernmost border, is the home of icefields, glaciers, and our highest mountains. Warm temperatures from mid-June to August. Tents and recreation vehicles use the campground at Kathleen Lake.
Nahanni (Reserve) 1972	4 765.6	Southwest corner of the Northwest Territories	First natural site named to the UNESCO World Heritage List. Wilderness canoeing with white-water adventure on the South Nahanni River. Access by air or water from Fort Simpson or Watson Lake. There are no roads.
Auyuittuq (Reserve) 1972	21 471.1	Baffin Island, NWT	Rugged terrain, short, cool summers and long, cold winters. Jet service connects Montreal, Iqaluit (Frobisher Bay) and Pangnirtung; then 31 km by foot, freighter canoe or snowmobile to the Park.
Gros Morne 1973	1 942.5	126 km north of Corner Brook, Nfld.	Short trails or two-day excursion routes.
Pukaskwa Year of Agreement 1978	1 877.8	25 km east of Marathon, Ont. (halfway between Thunder Bay and Sault Ste Marie)	Rugged wilderness, on the north shore of Lake Superior. Campground, sandy beach, and hiking trails.
Grasslands 1981	906.5	100 km south of Swift Current, Sask.	Ranching surrounds the prairie dogs and antelope amid the intriguing Killdeer Badlands and remnant teepee rings of the first residents.
Mingan Archipelago (Reserve) 1984	150.7	200 km east of Sept-Îles, Que.	Atlantic puffins, rare plants and flowers not found anywhere else in Canada. Unusual rock formations. Guided water tours and primitive camping. Accommodation and other services nearby.
Northern Yukon 1984	10 168.4	Yukon Territory	Migration route for the Porcupine herd of barrenground caribou, and North American waterfowl area.
Ellesmere Island (Reserve) 1986	39 500.0	25 000 km northeast of Yellowknife, NWT (the most northerly lands in Canada)	Region of perpetual ice and snow, with tenacious flora and fauna.
Bruce Peninsula 1987	270.0	Near Georgian Bay, Ont.	Dense forest of cedar, balsam, fir, spruce, birch and aspen. Breeding birds, wildlife and rarely seen Massasauga rattlesnakes. Hiking and swimming as well.
South Moresby (Reserve) 1988	1 470.4	Southern portion of the Queen Charlotte Islands, BC. Wilderness area, accessible only by floatplane, helicopter or boat	Numerous bays and small islands. Natural hot-springs, volcanic and limestone rock. Sitka spruce, western red cedar and hemlock. Seabird colonies.

1.8 PROVINCIAL PARKS, BY PROVINCE

Province and number of parks	Total area (developed area) km^2	Type of park	Accommodation[1] and facilities	Activities[1]	Camping parks, 1990	
					No.	Rates
Newfoundland and Labrador (93)	4 394	Natural environment Outdoor recreation Natural scenic attractions Wilderness and ecological reserves Waterway parks Park reserves	Picnic and camping facilities - picnic tables - drinking water - pit toilets - beaches - change houses - fireplaces - firewood - trailer dumping stations - boat launches - playgrounds - comfort stations - laundry facilities - electric hook up (not available in all parks)	Swimming Boating Visitor centres Interpretive programs Winter camping Cross-country skiing Nature trails Group camping Boat rental Fishing (not available in all parks)	41	$2.00 daily permit $10.00 yearly permit $6.00 camping per day $8.00 - $9.00 electricity $25.00 (season)-winter camping No charge for Newfoundland seniors No charge for group camping $35.00 weekly camping $250.00 seasonal camping
Prince Edward Island (31)	15 (9)	Campgrounds Resorts Beaches Picnic Roadside rest sites Heritage Water skiing Natural area	Mooring facilities Resorts Picnic sites Sandy beaches Campgrounds Serviced tent and trailer sites Marinas Canteens Supervised beaches (7 parks)	Swimming Golfing Tennis Board sailing Canoeing Interpretive programs Camping Skiing - cross-country - downhill Recreation programs	14	$9.58 - $14.02 + 7% GST a night no fee for day visits 25% discount for full season credit cards reservations
Nova Scotia (122)	218 (90)	Campgrounds Picnic Beach Roadside rest sites Wildlife Historic	Day-use picnic Day-use beach Campgrounds - tables - water - pit privies - trailer sanitation stations Handicap accessible (37 parks) (12 campgrounds)	Swimming Picnicking Camping Hiking Interpretive programs Angling Canoeing	21	$7.50 - $8.50 resident seniors - no charge no charge for day-use
New Brunswick (48)	249 (45)	Recreation Picnic Campgrounds Beach Resource	Lodge Marinas Campgrounds - tables - potable water - electricity - trailer sanitation stations - washrooms/ comfort stations	Swimming Boating Camping Golfing Interpretive programs Tennis Hiking Windsurfing Snowshoeing Skiing - cross-country - downhill Skating Tobogganing Sleigh rides Picknicking Canoeing Cycling Snowmobiling	..	$7.00 - $11.50 a night

1.8 PROVINCIAL PARKS, BY PROVINCE (continued)

Province and number of parks	Total area (developed area) km^2	Type of park	Accommodation[1] and facilities	Activities[1]	Camping parks, 1990	
					No.	Rates
Quebec (50)	71 000	Tourist Wilderness preserves Hunting and fishing preserves Salmon streams Campgrounds	Cabins Lodges Inns Campgrounds - picnic tables - potable water - electricity - trailer sanitation stations - washrooms - shower - fireplaces Mooring facilities Mountain huts Playgrounds Restaurants Beaches	Hunting Fishing Hiking Swimming Backpacking Snowshoeing Skiing - cross-country - downhill Camping Mountain climbing Horseback riding Golfing Interpretive programs Observation Nautical activities - board sailing - canoeing - boating Cycling Picnicking Snowmobiling	26	Primitive $7.75 a site Trapping Serviced: $8.75 to $14.00 a site Canoe camping Group camping $1.00 a person Canoe camping $7.75 a site
Ontario (261)	63 284	Wilderness Natural environment Waterway Nature Reserve Recreation Historical	Picnic and camping areas - beaches - picnic tables - fireplaces - firewood - electricity - tested drinking water - washrooms/comfort stations/showers - trailer sanitation stations	Visitor centres Outdoor exhibits Nature trails Swimming Boating Fishing Hiking Skiing - cross-country Board sailing Interpretive programs	97	$10.00 - $14.00 a night
Manitoba (147)	15 000	Wilderness Natural Heritage Recreation Special use Wayside	Hotels Motels Cabins Fishing lodges Campgrounds Space available for building summer homes Museums/visitor centres Trailer villages Goose sanctuary Marinas Floatplane bases Boat-launching ramps Playgrounds Trailer sanitary stations Picnic shelters Fishing access sites Biking trails Interpretive facilities	Swimming Camping Fishing Hiking Tennis courts Picnicking Boating Snowmobiling Skiing - cross-country - downhill Polo Golfing Horseback riding Bicycling Hunting	86	$7.00 - $15.00 a night $7.00 - basic $10.00 - electrical $15.00 - fully serviced

1.8 PROVINCIAL PARKS, BY PROVINCE (concluded)

Province and number of parks	Total area (developed area) km²	Type of park	Accommodation[1] and facilities	Activities[1]	Camping parks, 1990	
					No.	Rates
Saskatchewan[2] (31)	9 080	Provincial - wilderness - natural environment - recreational - historic	Campgrounds - picnic and playground areas - electricity - wood - potable water - washrooms - sewage pumpouts - boat and canoe rentals Modern cabins Chalet	Skiing Camping Picnicking Swimming Historic interest sites Snowmobiling Nature trails Arts and crafts Social functions Hunting, fishing, boating and sailing Snorkelling Auto touring Horseback riding Tennis Golfing Cycling Hiking trails Recreation and waterfront programs White-water canoeing	21	Entry $5.00 or $20.00 (season) Camping $6.00 to $12.00 daily $6.00 - economy $8.00 - standard $10.00 - serviced $12.00 - deluxe serviced
Alberta (115)	12 514 (1 264)	Provincial parks Wilderness areas Provincial recreation areas	Campgrounds Playgrounds Picnic areas Beaches Trails Boat launches Sanitation stations Restaurants Lodge for handicapped (provincial park)	Camping Picnicking Fishing Hiking Golfing Hunting Swimming Boating Interpretive programs Skiing - cross-country - downhill	51 40 recreation areas Kananaskis country has 46 campgrounds	$7.00 - $11.00 a night
British Columbia (390)	53 359	Wilderness area Recreation Natural Marine	Lodges Campgrounds Picnic areas Mooring facilities Hiking trails Nature trails Boat ramps Recreation vehicle sani-stations	Boating Camping Picnicking Visitor centres Interpretive programs Winter sports Skiing Mountain climbing Hiking	170	$5.00 - $13.00 a night

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[1] *Not applicable at all types of parks.*
[2] *1988 rates.*

Sources
Energy, Mines and Resources Canada.
Environment Canada.
Respective Provincial Government Departments.

Chapter 2

Gar Lunney/NFB/National Archives of Canada/PA 155798

FORESTS, FISH AND WILDLIFE

2.1 INTRODUCTION

CANADA'S FORESTS, FISH AND WILDLIFE have influenced every stage of the nation's development. Before European contact, these resources provided food, shelter and clothing for Canada's aboriginal peoples. For the first European traders and settlers, Canada's natural wealth was the chief attraction of the new country. Since Confederation, Canada's primary resources have formed the backbone of a diversified, increasingly industrialized economy.

Harry Rowed/NFB/National Archives of Canada/C 79019

Boom men on the Powell River, British Columbia, 1944.

2.2 FUTURE FORESTS

Forests are essential to ecological processes, including climate control and soil conservation, and are also home to innumerable species of animals and plants. Canada's first European traders and settlers saw the forest as virtually endless, and harvested timber as rapidly as they could. Canadians now recognize that our forests are not inexhaustible, and must be managed wisely.

Canada's forests cover 49% of the country's total land area, and are mainly coniferous. A little less than 2% of forest land is reserved for parks and other areas where harvesting is not allowed.

The 1986 national forest inventory comprised an area of 3.98 million km^2 of inventoried forest land, of which 2.4 million km^2 was classified as productive forest land. Provincial Crown forest land was 80% of the productive total, leaving 11% under federal jurisdiction and 9% in private ownership. Private lands include small woodlots and larger, industrial freehold parcels. These lands provide habitat and recreation opportunities and are an important source of timber production.

About 17 million hectares, or 7%, of Canada's inventoried productive forest land remains non-stocked after disturbance by harvesting, fire, or forest pests. Federal-provincial co-operation, greater efforts by industry, and cost-shared forest resource development agreements have begun to redress this problem. In the last 10 years, Canada's reforestation has increased more than 170%.

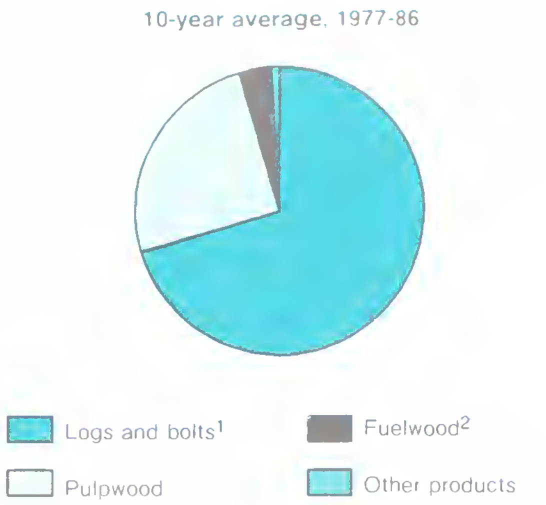
A national forest inventory is conducted every five years by Forestry Canada, in co-operation with provincial and territorial agencies.

The most recent (1986) volume estimates are low because they show only inventoried productive forest land, and 12% of forest lands had not been inventoried at that time. They do, however, indicate commercially accessible timber supplies. (See Table 2.1.)

INDUSTRY OVERVIEW

Canada is the world's leading exporter of forest products, accounting for 21% of the world total in 1989, with exports valued at $23 billion. Canada's estimated 453 million hectares of forest are about 10% of the world's total forest area, and range from mixed hardwoods and conifers in the east to pure coniferous stands in the west.

Chart 2.1
FOREST UTILIZATION



[1] Includes some wood used in pulp manufacture.
[2] Includes wood for charcoal.

This extensive base is the foundation of Canada's forest industry, which consists of logging, paper, and allied industries. Together, these sectors account for about 10% of Canada's value-added goods production. With a trade surplus of $18.6 billion, the forest industry is a major contributor to Canada's positive trade balance.

The output of the forest industry has risen steadily in the past several years. In 1987, total shipments increased 15.5% from 1986 to $46.8 billion; this was a 71% increase from 1982, when the upward trend began. All three sectors contributed to this growth in 1987; logging was up 16.2%, wood was up 17.2% and paper increased 14.3%. Employment, at 285,000, was at its highest level since before the 1980-81 recession.

The forest industry is concentrated in British Columbia, Quebec and Ontario. In 1987, the combined value-added for these three provinces was $17.4 billion, about 86% of the national total. This concentration has not changed much over time; in 1967, the three provinces accounted for 88% of value-added. (See Table 2.4.)

In 1988, capital and repair expenditures in the logging industry were estimated at $608.2 million, an increase of 8.1% over 1987. Real output was up 0.5%. For the paper and allied products group, capital and repair expenditures were estimated at $5.32 billion in 1988, a 28.3% increase, while shipments were up 8.9%. In wood industries, capital and repair expenditures were estimated at $1.57 billion, an increase of 26.4% over 1987. Despite this, the wood sector's real output declined 0.9% in 1988, and monthly lumber surveys predicted a 2% decline in lumber production.

Canada's main sources of wood are the inventoried, non-reserved forest lands south of 60°N latitude, which cover 212 million hectares or nearly 87% of Canada's productive forest lands. The annual allowable cut (AAC) for a forested area is the amount of timber that can be harvested each year without diminishing the long-term sustainability of the forest. For example, for a tree species that requires an average of 80 years to reach maturity, one-eightieth of the forested area can be harvested annually if the harvested areas regenerate sufficiently. Canada's estimated annual allowable cut is 233 million m^3. From 1982 to 1986, the annual average of wood volume harvested was about 159 million m^3. Extensive forest loss is caused by fire, insects and diseases.

2.3 FEDERAL AND PROVINCIAL JURISDICTION

The provinces own 90% of the forests south of 60°N — the rest are reserved for national parks or are held privately. The Constitution Act, 1867 specifies that the provinces are responsible for managing their public lands and the timber on these lands. The federal government owns about 95 million hectares, but most of this land is in the Yukon and Northwest Territories and is unsuitable for commercial timber production.

FEDERAL

In the provinces, only about 5.9 million hectares are federally owned; most comprise national parks, military reserves or Indian lands (which account for 1.5 million hectares). However, because the federal government has primary or shared jurisdiction over fiscal management, regional development, trade and tariffs, transportation and environment, at least six federal departments have a major interest in forestry.

Forestry Canada The principal federal forestry agency, Forestry Canada, develops, co-ordinates and implements federal policies and programs. It also provides detailed statistics and economic information to forestry user groups, and encourages new investments in forest resources and Canadian forest product exports. Forestry Canada gave more than $22 million in grants and contributions to universities and forestry organizations in 1988-89.

The department administers co-operative research programs with industry and the provinces, gives financial support for forestry research, and provides technical advice, scientific information and specialized services to the forest sector, the provinces and federal departments and agencies. The department's concerns include cost-effective forest management and protection, chemical and biological pest control, pesticide application technology, the environmental impact of forest practices, tree genetics, the use of biotechnology to improve growth and yields, and research on forest ecology. The department uses sophisticated satelite technology to maintain a comprehensive national forest inventory, and to improve methods of forecasting, detecting and suppressing forest fires.

Forest resource development agreements worth more than $1 billion have been negotiated between Forestry Canada and the provinces to encourage forest renewal on private and public lands, to ensure long-term timber supplies, and to foster regional economic development.

PROVINCIAL

Provincially-owned forest land is administered by each provincial government. Provincial tenure arrangements are generally designed to maximize returns from public timber and to support effective forest management. The bulk of Provincial Crown timber cutting rights are long-term arrangements, most of which are evolving in the direction of increasing industry's management responsibility. In provinces where there is high private ownership, forest policy provides incentives for greater timber use from private lands. Some provinces also require that forest companies holding long-term licenses on large forest areas make their timber surplus available to smaller firms. Smaller timber cutting rights are allocated through quotas or competitive bidding. In 1988, British Columbia raised the volume of timber sold competitively from 5.2 million m^3 to 10.5 million m^3 through the Small Business Forest Enterprise Program.

Economically accessible timber resources are fully allocated in most provinces. Fees for cutting rights and for harvested timber are either set administratively or negotiated. These rates vary by location, species, and product category, and are adjusted regularly to reflect prevailing market conditions.

2.4 PROTECTING THE FOREST

Every year fire, pests and disease destroy as many trees as are harvested in Canada's forests.

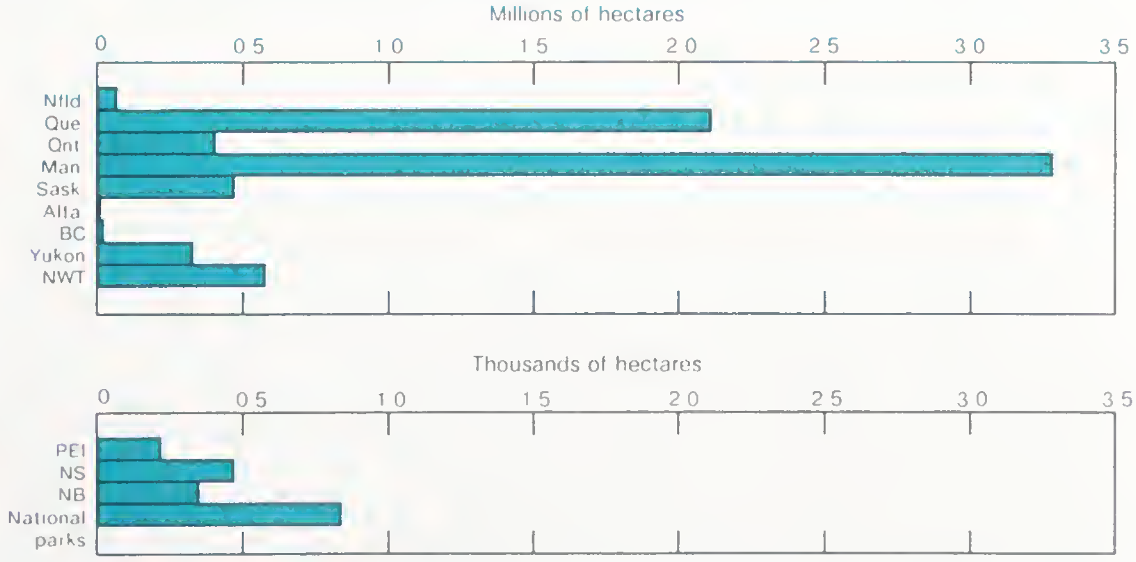
Reducing timber losses and other forest damage through forest fires, insect infestations and disease epidemics continues to be a major goal of provincial forestry agencies.

Conventional forest harvesting methods allow for natural regeneration of nearly two-thirds of harvested areas. To make up for the unregenerated one-third and to reduce the accumulated backlog, the provinces have increased the pace of reforestation in recent years. At the same time, improved cutting methods are being developed to allow more of the land to regenerate naturally.

Fire Provincial governments have stepped-up public awareness campaigns to decrease the number of human-caused forest fires. However, lightning is the primary cause of forest fires, and consequently many provinces have automated lightning detection networks. To improve fire response capability, aerial and ground patrols, lookout towers and improved heat detection

Chart 2.2

AREA BURNED IN FOREST FIRES, 1989



CANADA'S FLYING BOATS

When bush planes were first used to travel into the rugged Canadian wilderness in the 1920s, they were such a novelty they were called "flying boats".

First used to search for forest fires and aid in forestry operations, the planes became vital to mining and prospecting when gold was discovered in 1925 in Ontario's Red Lake district.

Today, these flying boats are the only mode of transportation for many people living in remote areas; and they are still serving their original purpose: firefighting, although now they have evolved into state-of-the-art machines.

In fact, the Canadair CL-215 is the only aircraft in the world specifically designed to be a water-scooping fire bomber. A major achievement for the Canadian aerospace industry since its initial production in 1969, more than 100 CL-215s have been sold to many countries including France, Spain, Greece, Thailand, Venezuela and Yugoslavia.

CANADA'S GREEN PLAN

CANADA'S GREEN PLAN

Canada is a land rich in renewable and non-renewable resources. Canadians have always relied heavily on these resources to support a high standard of living for a relatively small population.

Growing evidence, however, suggests that in developing its economy, Canada has not been fully meeting its environmental responsibilities. Canadians are increasingly becoming concerned with such distressing issues as pollution in the Great Lakes, city smog, and the contamination of ground water and soil.

In response, the Government of Canada developed a comprehensive plan of action in 1990, known as Canada's Green Plan. Based on consultations with more than 10,000 Canadians, the Green Plan sets out what all levels of government, industry and individuals can do to repair the damage already done to Canada's environment and to create an era of sustainable development for the future.

WATER

Water is one of Canada's most precious resources. To ensure a safe water supply for future generations, the Green Plan targets the clean-up of Canada's most polluted rivers, lakes and harbours, such as the St. Lawrence and Fraser Rivers, the Great Lakes, and Halifax Harbour. Ocean dumping of industrial waste will be prohibited. As well, a Water Safety Act will be enacted.

AIR

The Green Plan has set 1994 as the target for tougher emission controls on new vehicles, with a national agreement on air quality standards to follow a year later.

LAND

Canada's Green Plan has set a goal of a 50% reduction in waste going to landfill sites by the year 2000. As part of this mammoth effort, new markets will be found for waste materials.

The Plan sets out many steps the federal government will take to deal with toxic waste, including computerized monitoring of hazardous waste coming in and going out of the country. By 1995, the government will clean up 30 high-risk waste sites, and will destroy all PCBs under its jurisdiction by 1996.

RENEWABLE RESOURCES

In forestry, the government will create a number of demonstration projects as working models of sustainable forest development. It will promote environmental technology to control insect and disease damage to the forests and set up programs to plant 325 million trees in Canadian cities and towns.

equipment are being used. A national group has been formed to standardize training, making inter-agency firefighting among jurisdictions more effective. Most provinces work with Winnipeg's Canadian Interagency Forest Fire Centre, which co-ordinates personnel and equipment sharing when provinces or territories need help.

Several provinces have early fire detection and intervention programs. Many of these programs use computerized systems to bring information together, allowing firefighters to pinpoint hazardous areas and to predict the behaviour of fires.

To fight large fires, most provinces use a combination of CL-215 water bombers, other fixed-wing aircraft, and specially equipped helicopters. However, the mainstays of firefighting efforts are regular firefighting crews, backed by trained auxiliary crews.

Insects and Disease As with fires, insect infestations take a heavy toll on Canada's forests. However, sophisticated control programs have decreased the damage caused by most major forest pests. For example, spruce budworm infestation affected 13 million hectares of Quebec forest in 1981; in 1990, this had declined to 1.3 million hectares. Less dramatic budworm declines have been recorded in other provinces. These declines are due, in part, to strategic spraying programs, which increasingly use biological insecticides such as fenitrothian.

Spruce budworm is the most widespread forest pest, but in eastern Canada, tent caterpillar and gypsy moth infestations are also common, as are hemlock looper infestations. In British Columbia, pine-bark beetles and Douglas-fir tussock moths have caused extensive damage in the past.

In agriculture, co-operation with the provinces and private sector is expected to reduce soil degradation and limit agricultural emissions of greenhouse gases.

In fisheries, a National Sustainable Fisheries Policy and Action Plan is being developed, and enforcement strengthened against overfishing and pollution of fish habitat.

SPECIAL SPACES AND SPECIES

The Green Plan commits the government to completing the national parks system, which will effectively set aside 12% of Canada as protected space. The government will act to protect wildlife by strengthening law enforcement to stop poaching, and by other measures like research and restoring wildlife habitat.

THE ARCTIC

Under the Arctic Environmental Strategy, which is part of the Green Plan, the federal government will work more closely with northern governments and peoples to enhance the health and biological diversity of the fragile Arctic ecosystem.

GLOBAL ISSUES

The Green Plan will cap acid emissions from Canadian sources after reaching the goal of a 50% reduction by 1994.

Depletion of the ozone layer by manmade substances is a serious problem. The Montreal Protocol on Substances that Deplete the Ozone Layer is the international agreement to stop damaging it. Canada is recognized as a leader in this area because of its commitment to go beyond the requirements of the Montreal Protocol.

EMERGENCY RESPONSE

Some environmental emergencies are caused by natural disasters, others by people. The Green Plan responds to both by improving severe weather-early warning systems and vessel-control radar systems. To expand emergency response capability, a newly defined role for the Canadian Armed Forces will be established.

WORKING TOGETHER

Canada's Green Plan is about a new way of thinking, a new attitude that emphasizes co-operation to solve common environmental problems. Through the Green Plan, the federal government plans to strengthen its partnerships with provincial and territorial governments, and to encourage all Canadians to become more environmentally responsible. Initial funding covers a six-year period, but Canada's Green Plan will be reviewed each year so that it can be adapted to meet new environmental concerns if and when they arise.

FOREST REGENERATION

Every province has stepped-up funding for reforestation while increasing the involvement of the forest industry. Most provinces provide nursery stock for the reforestation of burned areas and for the backlog of lands insufficiently stocked by natural regeneration. Some provinces, however, have encouraged private nurseries and seed orchards rather than expanding their own capacity.

The scale of replanting efforts is immense. In 1990, Quebec and British Columbia each planted close to 250 million trees, while Ontario planted nearly 200 million.

In recent years, attention has turned from increasing the size of reforestation programs to ensuring cost effectiveness. Many provinces are increasing their use of containerized seedling stocks and have instituted quality control for nurseries and for tree planting. They are also developing silvicultural treatments for specific site conditions and are genetically improving planting stock.

Tree improvement is receiving increasing emphasis. This approach includes thinning, spacing, clearing and pruning. The provinces with the largest planting programs fund research and applied tree improvement programs; the other provinces rely on Forestry Canada and universities for research information. Co-operative tree improvement councils have been formed by industry and government in several provinces. As a result, seed collection areas and seed orchards have been established throughout Canada to produce and collect superior tree seed.

THE LOBSTER INDUSTRY

The value of Canada's lobster haul in 1988 was almost $265 million— far more than the crab and shrimp catch combined. In Canada, lobster fishing takes place primarily on the east coast and is a major source of revenue. Efforts to introduce lobster to the coast of British Columbia have been unsuccessful.

Like most of Canada's fish exports, the bulk of lobster goes to the United States. Much lobster is shipped live to markets around the world—hence the name "market" lobsters.

Apart from "market" lobsters, there is also a large industry in "canners" — slightly smaller lobsters than those sold live. This industry is concentrated in several areas in the Gulf of St. Lawrence.

The high commercial value of lobsters has produced interest in cultivating or ranching them. While this is technically possible, raising them from the egg is extremely costly.

Department of the Interior/National Archives of Canada/PA 41676

Lobster catch, New Brunswick.

William Notman/National Archives of Canada/C-65043

Fishing boats, Petty Cove, Newfoundland.

2.5 FISHERIES

With the largest coastline in the world and thousands of rivers and lakes, Canada has for centuries benefited from prosperous fisheries. In some parts of the country, the industry has sustained whole communities for generations. In 1988, the total Canadian catch was 1.64 million tonnes, worth approximately $1.6 billion. This represented a 4.8% increase over the 1987 catch.

Canada is the second largest exporter of fish products (in terms of value) in the world. In 1989, Canada exported three-quarters of its product — 601,152 tonnes worth $2.4 billion. The United States accounted for the largest share (54%) of exports, followed by Japan and the European Economic Community. The most popular export items were cod, herring, crab, lobster and scallop from the Atlantic Coast, and halibut and salmon from the Pacific Coast.

INDUSTRY OVERVIEW

Canada's fisheries consist of two sectors: sportfishing, and commercial fisheries. In the sport fishing sector, federal and provincial government programs focus on habitat protection and enhancement and are often funded through fishing license surcharges. Commercial sector priorities include monitoring and protecting fish stocks, encouraging rationalization of fisheries to increase competitiveness, and funding and promoting aquaculture programs.

Atlantic Canada In many parts of the region, fisheries have long been the mainstay of economic life. Newfoundland and Nova Scotia account for about 80% of Atlantic Canada's total catch: Newfoundland has the largest catch, but Nova Scotia's has greater dollar value.

In Newfoundland, the fishing industry accounted for 8% of the province's Gross Domestic Product (GDP) in 1987-88, and employed close to 29,000 licensed commercial fishermen, with fish plants supplying another 12,000 person years of employment. New Brunswick employed 22,000 and Nova Scotia, 16,000, including licensed fishermen and plant workers.

However, certain traditional Atlantic groundfish stocks — particularly cod — are now below satisfactory levels. This has led to recent sharp reductions in fishing quotas, and consequent economic crisis for some communities.

In Nova Scotia, the annual catch dropped from 522,371 tonnes in 1988 to 491,173 in 1989, although increased prices meant that the value of the 1989 catch was slightly higher than in the previous year, reaching $438 million. After processing, Nova Scotia fish products were worth about $800 million, with lobster being the most important harvested species.

In New Brunswick, the fisheries are one of the largest industries, worth about $500 million annually. Aquaculture of salmon, with some oysters and mussels, is worth $85 million annually.

ZEBRA MUSSELS

One of Canada's most pressing environmental concerns has arrived on the scene only recently. No one knows exactly how ***Dreissena polymorpha****, better known as the zebra mussel, migrated to North American lakes. What is known is that this hearty native of the Soviet Union has found freshwater conditions in North America much to its liking.*

Since 1986, the zebra mussel has established itself throughout the Great Lakes system. Multiplying in great numbers, this seemingly harmless mussel has clogged municipal and industrial water intake pipes, and is suspected of disrupting the aquatic food chain, has hampered sport and commercial fishing, and deposited razor-sharp shells on recreational beaches.

Zebra mussels originally come from the Black Sea and Caspian Sea regions of Russia. Brought to Europe in the 1700s, the mussel has spread to inland waterways and lakes throughout Europe. Scientists believe they were transported to the Great Lakes from Europe in the freshwater ballast of tankers, which was then discharged into the Great Lakes.

Zebra mussels were first detected in Lake St. Clair in June 1988. By November 1989, they had been found in water treatment and industrial water systems in the Detroit River and Lake Erie, in Lake Ontario at the mouth of the Welland Canal, Lake Michigan and the St. Lawrence River. In December of 1990, zebra mussels were found in Lake Superior at Duluth and Thunder Bay.

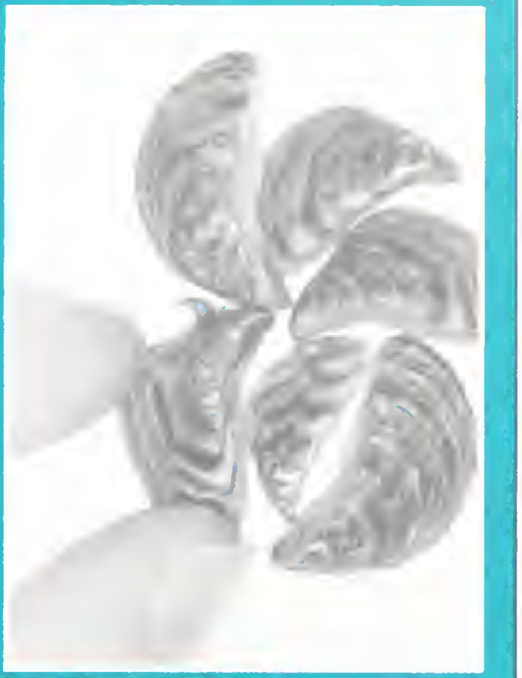
Zebra mussels are small, typically measuring no more than 5 centimetres (cm), with shells covered in alternating light and dark bands. Most significantly, they are prolific: mature female mussels can produce between 30,000 and 40,000 eggs per year!

Water intake pipes provide ideal habitat, since the water flow brings with it the microscopic plants and algae upon which zebra mussels feed. Thick layers of mussels can severely reduce water intake (one Great Lakes facility reported up to 250,000 mussels per square metre on intake surfaces). Valves can become blocked. Excretions from the mussels can corrode pipelines. And the decay of dead mussels fouls the taste and smell of the water.

Scientists are testing many methods to control zebra mussel damage including scraping the surface of intake pipes, or using electric shock, sonic bombardment, ultraviolet and other types of radiation, heat treatments, and chemicals such as chlorine and ozone. Whatever the methods, the costs are usually considerable, and the risks to the environment must be minimized during removal.

The impacts of the mussels on navigation and boating are less severe, but still carry a price. By attaching to the hulls of ships, the mussels create drag, which in turn, reduces the boat's speed and fuel efficiency. The sheer weight of an accumulation of zebra mussels on the submerged part of navigation buoys and markers has even, on occasion, been known to sink them.

Since there is no way to eliminate zebra mussels from the Great Lakes without destroying other aquatic and bird life in the process, it looks like this new and unwelcome guest is in the Great Lakes to stay. In fact, it is quite likely zebra mussels will spread beyond the Great Lakes into other North American water bodies. Scientists can only continue their search for ways to control the ecological and economical damage the zebra mussel has already shown it is fully capable of doing.



Ontario Ministry of Natural Resources

Zebra mussels.

Prince Edward Island's catch was worth $72 million in 1989, rising to $185 million when the value of processing and services are added. Lobster accounted for 63% of the catch. Aquaculture of oysters, mussels and rainbow trout is still small-scale, but increasingly significant.

Western Canada In the Western provinces, sport and commercial fishing are major sources of revenue. British Columbia has the largest commercial fishery in Canada, with a landed value of $416 million in 1989. After processing, the catch was worth $824 million. Five species of Pacific salmon are the mainstay of the industry. Other fish caught alongshore and in the deep-sea fisheries include herring, halibut, cod, sole and a variety of shellfish. Freshwater sportfishing is also an important industry in British Columbia, generating $300 million in revenues in 1985, and accounting for more than 5,200 person-years of employment.

Extensive re-stocking is protecting British Columbia's fisheries. In 1989, the province's five hatcheries produced more than 11 million fish, and a conservation fund established in 1981 has provided more than $6 million for 232 fish habitat protection and improvement projects.

Many provinces put funds from resource-related recreation into managing that resource. In Alberta, part of the revenue for improving habitat protection and resource management comes from sport-fishing licenses. Alberta's commercial fishing harvest is mostly lake whitefish valued at $2.2 million in 1989-90.

Manitoba's fishing industry generates more than $175 million every year, with commercial production responsible for $23.4 million of the total in 1989. The major commercial catches are walleye and sauger. Anglers spent $159 million in Manitoba in 1985 on bait, lodges, outfitters and camps. Although fishing is an important source of food for Manitobans living in remote areas and for some native peoples, between 80% and 90% of the fish caught in the province is exported.

Ontario has the largest freshwater fishery in North America, with annual commercial landings of about 27 000 tonnes, worth approximately $50 million before processing and $150 million afterwards. The main species harvested from the province's lakes, streams and rivers are smelt, yellow perch, walleye and lake whitefish. More than 90% of the harvest comes from the Great Lakes, mostly from Lake Erie. Ontario also has the largest sportfishing industry among the provinces, with expenditures on fishing trips totalling about $980 million in 1989.

Quebec had a drastic decline in landed commercial volume in 1990 because of lower quotas, which fell to 72,100 tonnes from 97,000 tonnes in 1987. This decline had a direct impact on the processing industry; the value of processing plant shipments dropped to $152 million in 1990 from $257 million in 1987. To cope with contraction phases in the industry, the province initiated in 1990 a five-year restructuring program that will consolidate the fishing fleet and the processing sector. The program is designed to re-establish a balance between the province's resources and its processing capacity, stabilize the financial situation of fishermen, and renew the province's resources.

2.6 FISHERIES MANAGEMENT

Chris Lund/NFB/National Archives of Canada/PA-146255

Salmon fishing off the coast of British Columbia.

Canada's oceans and inland waters have always been important to the country's growth, and seacoast and inland fisheries were singled out in the Constitution Act, 1867 as an exclusive responsibility of the new federal government. In 1868, the Department of Marine and Fisheries was created. By 1881, the fisheries branch of the department employed nearly 700 people and oversaw a $16 million industry exporting 40% of its production.

Today, the federal government still has jurisdiction over Canada's coastal and inland fisheries, which are managed co-operatively with the provincial governments.

The Department of Fisheries and Oceans conserves, develops and regulates Canada's coastal and freshwater fisheries. The department also conducts fisheries and oceanographic research, manages the nation's navigable coastal and inland waters, and represents Canada in international agreements on fisheries management and marine environment quality.

The federal government also inspects fish and fishery products produced for sale outside provincial boundaries. In the national parks, fisheries are managed by the Canadian Wildlife Service.

There is a close relationship between provincial departments responsible for fisheries and the federal Department of Fisheries and Oceans. For example, in Quebec the provincial government administers freshwater fish and fish that migrate between salt and freshwater, while marine fisheries are managed by the federal government. In British Columbia, the fisheries for marine species and for salmon that migrate between the sea and freshwater are managed federally, while the provincial government manages freshwater fisheries. Licences for sportfishing are usually distributed by provincial or territorial governments which retain the revenues collected; many are putting these revenues into fish conservation projects.

International fisheries Much of the damage done to aquatic resources is the result of over-harvesting due to social and economic pressures, and national and international competition and insufficient knowledge. Problems under Canada's control are corrected as conditions warrant, but resources shared with other nations must be managed jointly.

Department of the Interior/National Archives of Canada/PA 41662

Sorting herring, Seal Cove, New Brunswick.

Through membership in 10 international fisheries commissions and an international council, Canada co-operates with many nations to obtain scientific data and formulate policies for developing and conserving fisheries. Canada is also a member of the fisheries committee of the United Nations Food and Agriculture Organization and of the Codex Alimentarius Commission, concerned with world food quality standards. In 1950, Canada joined nine other countries in signing the International Convention for the Northwest Atlantic Fisheries.

Canada extended its fishing zones to 200 nautical miles in January 1977. Negotiations then began to revise multilateral agreements, and a new international organization, the Northwest Atlantic Fisheries Organization (NAFO) was established to regulate fishing outside the area beyond and immediately adjacent to the 200-mile limit. Canada also co-operates with other countries in conserving high seas fisheries resources elsewhere through research and international agreements.

Acid rain Acid rain has become an urgent issue internationally. Many studies show that acid rain adversely affects many lakes and rivers; it may also be harming crops and forests. Already acid rain has led to severe degradation of many aquatic ecosystems in the United States, Canada, and Europe, and extensive areas of North America could eventually be affected. Acidity and toxic substances have increased in many lakes and rivers over the past several decades, particularly in New England and southeastern Canada.

The conditions leading to acid rain are reasonably well known. Sulphur dioxide and nitrogen oxide emissions are transformed in the atmosphere into sulphuric and nitric acids, which are then deposited on vegetation, soils and surface waters. In the United States and Canada, the sources of acid rain are entirely human in origin; circumstantial evidence links power plant emissions to acid rain.

Many species of fish have been destroyed by acid rain. Fish taken from acidic waters have high concentrations of mercury and other heavy metals. Acid rain also causes high concentrations of toxic trace metals in surface and ground waters, making them unfit for human consumption.

Various strategies to control the emissions causing acid rain have been proposed. The 1988 Canadian Environmental Protection Act (CEPA) provided a framework for protecting Canadians from all forms of pollution caused by toxic substances. It requires industries and government to control, reduce or remove the thousands of toxic substances used in the Canadian marketplace, the hundreds of effluent streams, and the many emissions generated by industrial activities and other operations. The legislation allows the government to manage toxic chemicals, and to provide better enforcement and tougher punishment of polluters.

COUNTING FISHERMEN

Fishing off Canada's East Coast predates the arrival of Jacques Cartier in 1534. By then, European fishermen had already been using the north shore of the Gulf of St. Lawrence as seasonal fishing stations for some time; by the 18th century crews of fishermen were at work off the coast of the Gaspé Peninsula.

The 1867 *Year Book* records that in the year of Confederation fishing was a $9 million industry. In 1882, when the government started paying bounties to fishermen and shipowners for fish caught, nearly 30,000 fishermen received bounties, although the actual number of people making their living as fishermen was over 60,000.

The value of the yearly catch has grown throughout this century from $16 million in 1911 to $1.3 billion by 1986, but the number of fishermen involved in the trade has remained comparatively stable, fluctuating between 60,000 and 75,000 in most years. The numbers dropped significantly in the early 1970s, when high oil prices and depleted stocks threatened the Atlantic fisheries. Government aid and the 1977 extension of Canadian fishing limits to 200 nautical miles, however, helped revive the industry, although foreign competition and depleting stocks remain a problem. In 1986 there were 88,428 registered fishermen, 80,446 of whom were involved in the sea fisheries.

ACID RAIN

In recent years, Canada has enacted strong measures to deal with acid rain — a serious environmental problem plaguing this country and many others.

Acid rain damages lakes, forests, and soil and erodes buildings and monuments. And there is evidence it may also cause health problems for humans.

At the root of the problem are sulphur dioxide and nitrogen oxide emissions. Major sources of sulphur dioxide include coal-fired power stations and certain types of ore smelters, such as those producing nickel and copper. The main sources of nitrogen oxides are automobile exhaust and the burning of fuel. These emissions can travel thousands of kilometres through the atmosphere, returning to earth in acidic rain, fog, snow or dust.

About 55% of Eastern Canada's forests are exposed to acidic rainfall, threatening a $14-billion forest products industry. As well, of 300,000 vulnerable lakes, 150,000 are being damaged and another 14,000 are seriously harmed. The seven most eastern provinces — Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland — are especially hard hit by acid rain, which causes $1 billion in damage every year.

This country's acid rain problem is compounded by emissions from its southern neighbour — more than half of the acid rain in Eastern Canada is due to emissions from the United States. Conversely, 10% to 25% of acid rain in the northeastern US originates from Canada.

Scientists in Canada have been aware of acid rain since the late 1960s, but it wasn't until the early 1970s that its basic causes and the threats it posed were generally agreed upon. Significant acid-rain research took place during the 1970s and by the early 1980s Canada began adopting comprehensive policies to deal with the problem.

Among initiatives undertaken to tackle acid rain, Canada became a member of the "30% Club" in 1984, when it hosted a meeting with nine European countries that led to an agreement to cut sulphur emissions by 30% by 1993.

Another important initiative is the Canadian Acid Rain Control Program, announced by the federal government in 1985. This program will reduce acid-rain emissions in Eastern Canada by almost 50% — to 2.3 million tonnes from 4.5 million tonnes per year — by 1994. In the year 2000, the three westernmost provinces will join the program and national sulphur dioxide emissions will be capped at 3.2 million tonnes per year.

In 1991, Canada and the US signed the Air Quality Accord, committing both countries to decrease acid rain-causing emissions to a level not threatening to the Canadian environment.

Indeed, actions taken by Canada and the United States should ensure that acidic deposits never reach damaging levels in Western Canada. By the year 2000, it is estimated that damaging levels of acid rain should be virtually eliminated in Canada.

To solve Canada's acid rain problem, wet sulphate deposits must be reduced to less than 20 kilograms per hectare per year in all vulnerable areas of Eastern Canada. This requires that total SO_2 emissions east of the Saskatchewan–Manitoba border be reduced by 50% from the 1980 level to 2.3 million tonnes, and that the flow of SO_2 from the United States into Canada also be reduced by 50% to about 2 million tonnes a year.

In 1990, the U.S. Clean Air Act was amended to meet the transboundary emission reduction target. The Canadian Acid Rain Control Program, introduced in 1985, has already reduced SO_2 emissions by 40% and is expected to have dropped emissions to 50% of 1980 levels by 1994. The federal and provincial environment ministers have agreed to establish a permanent national emission cap of 3.2 million tonnes of SO_2 beginning in the year 2000.

In 1990, negotiations began between Canada and the United States on a comprehensive air quality agreement to deal with a number of shared problems.

2.7 WILDLIFE

Canada's original inhabitants often depended on wildlife for food and clothing; some Canadians living in remote areas still do. After European contact, the fur trade profoundly affected exploration and settlement.

As Canada developed after Confederation, many animal populations were seriously depleted or even became extinct. Habitat disappeared as forests were cut and grasslands were cultivated. Industrial and urban development polluted streams, drained wetlands and dammed rivers. Reversing these processes is difficult, but wildlife is an integral part of our ecosystem. There is also an economic argument for conservation: wildlife-based activities add approximately $6 billion annually to Canada's Gross Domestic Product.

Canada's wildlife includes most of the world's stock of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines. However, the arctic and alpine tundra has begun to show serious side-effects from changes caused by people. The adjacent sub-arctic and sub-alpine non-commercial forests have also been affected, mainly by human travel and an increase in forest fires. Most of Canada's forests, grasslands and wetlands have been converted to human uses, resulting in general environmental problems.

Attempts to conserve Canada's wildlife began in 1887 when North America's first bird sanctuary was established at Last Mountain Lake in Saskatchewan. In 1894, laws were passed to save wood bison from extinction; in 1907, a protected core herd of plains bison was established at Wainwright, Alberta.

Today, the federal government protects and manages marine species and certain migratory birds, and also works to conserve wildlife of national or international importance, such as species that are endangered or that migrate across provincial or national boundaries. However as a natural resource, most wildlife falls under provincial jurisdiction.

FEDERAL JURISDICTION

To help monitor bird populations, waterfowl hunters are surveyed annually on habitat conditions, the extent of crop damage, and on species abundance and the degree to which populations have been affected by hunting. Bird-banding programs provide information on the migration and biology of birds; this information is useful for managing waterfowl.

The Canadian Wildlife Service (CWS) researches and runs programs that protect Canada's wildlife and natural habitat. The CWS was founded in 1917; it is now part of Environment Canada.

As executor of the Migratory Birds Convention Act, the CWS works with the provinces and provincial wildlife agencies to recommend annual revisions of hunting seasons, bag limits and hunting practices.

The CWS has set aside more than 40 National Wildlife Areas across Canada. A number of co-operative wildlife areas are managed jointly by the CWS and the provinces. As well as short-term studies, the CWS has conducted long-term studies of caribou and polar bears.

The CWS endangered species program involves compiling the official endangered species list and attempting to re-establish populations of endangered species. In recent years, the Wood Bison has been "down-listed" to a category of less concern, and the White Pelican has been removed from the list altogether. Recovery plans have been instituted for whooping cranes, peregrine falcons and swift foxes. When the whooping crane program began in 1966, there were only 43 whooping cranes in the world. Today, 146 cranes breed at Wood Buffalo National Park, Northwest Territories, and the whooping crane population worldwide (wild and captive) is now 230.

Continuing CWS research focuses on the effects of toxic chemicals such as acid rain and on the connection between chemical contamination in the lower Great Lakes and the breeding of fish-eating birds. Studies are also conducted on species, such as the Herring Gull, whose habits make them excellent indicators of environmental quality.

The North American Waterfowl Management Plan (NAWMP), signed by Canada and the United States in 1986, focuses on maintaining and restoring wetland habitat on the continent. The first waterfowl habitat enhancement and protection project in North America was established under NAWMP in the Quill Lakes area of Saskatchewan in 1988. Four joint ventures have recently been developed, including one to restore 1.5 million hectares of waterfowl habitat on the

John Boyd/National Archives of Canada/PA 60730

A Snowy Owl, 1908.

National Archives of Canada/C-71600

Importing reindeer to Canada, 1923.

Dept. of the Interior/National Archives of Canada/PA 42049

Musk-oxen, 1929.

THE ENVIRONMENTAL ASSESSMENT REVIEW PROCESS

When a project is proposed with major environmental consequences, such as a dam or a mine—the Environmental Assessment and Review Process (EARP), may go to work.

Created by Cabinet in 1973, EARP's role is to make sure the environmental effects of all projects requiring a federal decision are determined before they are undertaken; that assessment results are considered in final planning; and that the public is consulted.

EARP is used when a federal government department undertakes a proposal that may damage the environment; when such a proposal involves federal funds; when such a proposal is undertaken on federal property; and when another organization's proposal falls under federal regulations.

In January 1991, 22 project reviews were underway on a range of projects across the country, including a new runway at the Vancouver International Airport and an open-pit uranium mine west of Baker Lake in the Northwest Territories.

While EARP provides a valuable service, it operates as a planning tool only, and is criticized for not being entrenched in law.

Over the years, some alterations have been made to strengthen the process, which has been criticized as being inadequate: for example, EARP is administered by the Federal Environmental Assessment Review Office (FEARO), a body that maintains an arms-length relationship with the environment ministry, but has no special legal status to enhance its clout.

In 1990, the federal government submitted legislation to Parliament that would have significantly strengthened and clarified the process. It included provisions requiring that all proposals submitted to Cabinet be subject to review and vesting more authority over the process with the environment minister. The legislation, however, was not passed during the legislative session.

Canadian Prairies at a cost of $800 million over the next 15 years. Nesting and migration habitat in Eastern Canada will also be protected at a cost of $200 million. Another project will concentrate on black duck habitat in Eastern Canada and on the Atlantic Coast.

PROVINCIAL AND TERRITORIAL JURISDICTION

Wildlife management protects wildlife from becoming endangered or extinct, maintains populations, and preserves natural habitat. The provinces monitor populations of game and non-game species, promote public awareness of wildlife protection strategies, and regulate hunting and fishing. Education programs for hunters, trappers and fishermen encourage wise resource use.

Each province has its own methods of carrying out this mandate. In Newfoundland and Labrador, research and management programs cover moose, caribou, black bear, lynx, ptarmigan, peregrine falcon, snowshoe and Arctic hare, ruffed and spruce grouse, as well as mink, beaver and arctic fox.

Many provinces are teaming-up with private wildlife conservation groups. In Prince Edward Island, two five-year agreements have recently been signed by the province and Wildlife Habitat Canada. The first agreement resulted in integrated management of a watershed, benefiting fish and wildlife; the second will protect and enhance the province's wetlands. A five-year wetlands development and management agreement has also been signed with Ducks Unlimited Canada.

In conjunction with the NAWMP, Nova Scotia emphasizes wetlands management through enhancement, research, and inventory programs. In 1990, the province signed a conservation agreement with its native people.

Recent agreements with Wildlife Habitat Canada and Ducks Unlimited Canada have contributed to expanded programs in New Brunswick's wetland, coastal and forested habitat. Harvest management controls populations of deer, moose, bear, grouse, snowshoe hare and various furbearers. In 1990, the Antlerless Deer Permit Management Program was introduced to improve control over the reproductive component of the deer herd.

Environment Canada Parks Service

Rare whooping crane in Wood Buffalo National Park, Alberta/Northwest Territories.

Monitoring wildlife levels is an integral part of successful management. In Quebec, aerial inventories, radio tracking and harvest records keep track of animal populations and ensure that hunting, trapping and fishing is conducted responsibly. Twelve wildlife habitats have been given conservation priority by the province, including white-tailed deer gathering areas, caribou calving and migration areas, waterfowl gathering areas, moose grounds and fish habitats. Working with non-profit agencies to manage these and other wildlife areas, the province has amended its laws to bar any activity likely to affect essential elements of animal or fish habitat.

Ontario's wildlife management plan includes a release program for peregrine falcons, surveys of bald eagles, and various studies to improve management of the habitats of endangered, threatened and vulnerable species. Wetlands throughout Southern Ontario are being evaluated and rated; significant wetlands will be acquired for special management. Hunter and trapper education programs are mandatory in Ontario; and the Community Wildlife Involvement Program funds group and individual projects to improve wildlife habitat. The province's management of fur-bearing mammals is based on an area-specific licensing system, with seasons determined by quotas. Moose and deer populations are managed by controlling the number, age and sex of animals harvested.

Manitoba administers sport-hunting of six species of big game including white-tailed deer, moose and elk, and seven types of upland game birds, including ruffed and sharp-tailed grouse. Waterfowl species commonly hunted include mallards, Canada geese and snow geese. Manitoba's wildlife program pays special attention to the relationship between forest industries and the woodland caribou, and to endangered species such as the burrowing owl, the peregrine falcon and the piping plover.

Part of Saskatchewan's hunting and fishing license revenues are used to purchase critical wildlife habitat and to fund habitat development projects. The Saskatchewan Upland Habitat Protection, Enhancement and Restoration program (SUPER) was launched in 1988 to protect upland habitat in agricultural regions. In 1990, the Saskatchewan Wetland Conservation Corporation was created to administer and co-ordinate the province's participation in the North American Waterfowl Management Plan.

EARLY WILDLIFE CONSERVATION

For more than 100 years, birds have found refuge at Saskatchewan's Last Mountain Lake Bird Sanctuary. Established in 1887, it was Canada's first wildlife conservation area and is the country's oldest bird sanctuary. It was originally created to protect severely depleted bird populations from uncontrolled hunting.

At least 35 species of birds, including ducks, geese, grouse, cranes, hawks and owls, breed in the 2,500-acre haven. The area is also used as a resting place for about 80 species of migrating birds.

Many of the birds attracted to Last Mountain Lake are rarely seen elsewhere, and every year naturalists and bird watchers flock to the sanctuary to enjoy the wide variety of birdlife and habitat.

Today, the Canadian Wildlife Service administers 96 migratory bird sanctuaries, including Last Mountain Lake, which provide a natural habitat for birds in an increasingly industrialized world.

Mines and Resources/National Archives of Canada/C-10036

And the buffalo roam . . .

Alberta, too, devotes part of its hunting revenues to enhancing and developing wildlife habitat. Annual questionnaires are used to monitor harvesting levels of game and furbearing species, and hunting seasons are carefully regulated. Wildlife recreation is promoted through initiatives such as the recently established Watchable Wildlife Program. Trappers grossed $2.1 million in 1989-90 from the provinces' furbearing animals.

British Columbia's diverse physical setting, climate and vegetation support the greatest variety and abundance of wildlife in Canada. The province boasts at least 112 species of mammals, more than 400 resident species of birds, 14 reptile species and more than 20 species of amphibians. The province has a wide range of programs to enhance wildlife and wildlife habitat. Hunters spent an estimated $144 million in 1988-89, and the harvest from furbearing mammals was worth $3.6 million.

The Yukon Fish and Wildlife Branch licenses and regulates trapping of furbearing animals and funds biological research and public education programs. In the Northwest Territories, the Department of Renewable Resources conducts surveys on Dall's sheep and wood bison, radio-collars barren-ground caribou, and tags polar bears.

2.8 THE FUR INDUSTRY

For several years, the public has been less interested in buying furs, and the production and value of pelts has consequently decreased. Canadian production of raw furs was valued at $75.5 million in 1988-89, down 38.4% from $122.5 million in 1987-88. Of the 1988-89 total $34 million came from wildlife pelts and $41.5 million from farm pelts. Production of wildlife pelts decreased by more than half, while farm production of mink and fox continued to increase.

Fur Farming Mink is the most important species raised on fur farms. The peak year was 1967 when 1,359 mink farms produced nearly 2 million pelts. In 1989, pelt production was about 1.5 million from 511 mink farms. The average value of pelts was $17.45, down from $24.64 in 1988.

Ontario, Quebec, Nova Scotia and British Columbia were the principal producers of mink in 1988-89. Although some mink are raised in every province, newcomers to the business are rare because it requires a high capital outlay to start-up.

In 1989, fox farm pelt production increased 3.3% to 113,212. From 1971 to 1989, the number of fox farms increased from 39 to 1,001. The market for all long-haired pelts improved in the 1970s and prices rose sharply, reaching a high of $364.42 in 1978. In 1989, pelts were valued at $37.31.

The Atlantic Seal Hunt Harvesting seals is an important source of income in Newfoundland and Labrador, the Îles-de-la-Madeleine, the Quebec north shore and the Arctic. Its significance is greater than the relatively small dollar returns might suggest, since there are few income-earning activities available during the seal hunt period.

In 1982, the European market for seal products collapsed as a result of seal hunt protests. In 1983, the European Community banned imports of products from whitecoat harp seals and blueback hooded seals. The seal harvest declined drastically in 1984, prompting the federal government to appoint a Royal Commission on sealing in Canada.

As a consequence of the Commission, the government announced a new seal policy in 1987 which prohibits commercial harvests of whitecoats and blueblacks and the use of vessels over 19.81 metres long, and phases out the technique of catching seals with nets. Today, the seal harvest is less than one-third of the historic levels and is conducted largely by land-based sealers in Newfoundland, the north shore of Quebec and the Îles-de-la-Madeleine.

Harvested seals are used for meat, fur, leather and oil. The harp seal is the main species. More than 2.5 million of these seals now inhabit the northwest Atlantic and their numbers are believed to be increasing.

Sources

Environment Canada.
Fisheries and Oceans Canada.
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Statistics Canada.
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FOR FURTHER READING

Selected publications from Statistics Canada

- *Canadian Forestry Statistics*, annual. 25-202
- *Logging Industry*, annual. 25-201
- *Pulpwood and Wood Residue Statistics*, monthly. 25-001
- *Shipments of Solid Fuel Burning Heating Products*, quarterly. 25-002
- *Fish Products Industry*, annual. 32-216 Discontinued, last issue 1984.
- *Fur Production*, annual. 23-207
- *Report on Fur Farms*, annual. 23-208

TABLES

LEGEND

. . *not available*
. . . *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*

e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

2.1 CANADA'S FOREST INVENTORY, 1986

Province or territory	Inventoried forest land ('000 km^2)					Volume[3] ('000 000 m^3)		
	Inventoried forest land[1]	Productive forest land[2]				Softwoods	Hardwoods	Total
		Crown provincial	Crown federal	Private and others	Total			
Newfoundland	225	107	1	4	112	487	38	525
Prince Edward Island	3	--	--	3	3	16	10	26
Nova Scotia	40	10	1	27	39	150	94	244
New Brunswick	63	30	2	30	61	362	209	571
Quebec	825	480	2	66	548	3 020	1 204	4 225
Ontario	466	323	3	57	383	2 205	1 325	3 529
Manitoba	251	135	3	11	149	444	236	680
Saskatchewan	237	150	5	4	159	536	370	905
Alberta	378	227	18	10	254	1 684	972	2 656
British Columbia	603	487	5	20	511	8 180	688	8 867
Yukon	274	—	76	—	76	436	44	480
Northwest Territories	614	—	143	—	143	315	131	446
Total	3 979	1 949	257	231	2 437	17 834	5 320	23 154

[1] *Land primarily intended for growing, or currently supporting, forest.*
[2] *Productive forest land available for growing and harvesting forest crops. Excludes reserved forest land by law not available, as in national parks, some provincial parks, game refuges, water conservation areas, nature preserves and military areas.*
[3] *Merchantable volume on productive forest land*

2.2 FOREST FIRE LOSSES, 1987-89

Province or territory	1987		1988		1989	
	Fires No.	Area burned ha	Fires No.	Area burned ha	Fires No.	Area burned ha
Newfoundland	287	17 129	116	1 780	192	68 156
Prince Edward Island	52	113	21	17	29	215
Nova Scotia	590	560	328	335	425	462
New Brunswick	653	1 199	438	1 978	392	343
Quebec	992	36 835	1,331	275 722	1,167	2 107 512
Ontario	1,923	75 582	3,260	390 706	2,430	405 886
Manitoba	519	169 519	982	485 653	1,147	3 281 300
Saskatchewan	980	226 494	1,064	81 100	1,020	470 510
Alberta	1,238	36 113	872	14 538	795	6 411
British Columbia	3,477	34 541	1,951	11 482	3,520	25 381
Yukon	125	88 326	115	6 310	244	328 347
Northwest Territories	374	399 077	190	66 079	613	577 585
National parks	94	141	73	331	131	834
Total	11,304	1 085 629	10,741	1 336 031	12,105	7 272 942

2.3 ESTIMATED AVERAGE ANNUAL DEPLETION[1], CAUSED BY INSECTS AND DISEASES (MILLION CUBIC METRES)

Cause	Depletion
Insects	
Spruce budworms	
Mortality	32.1
Growth reduction	9.7
Mountain pine beetle	
Mortality	11.2
Spruce bark beetle	
Mortality	2.2
Other bark beetles	
Mortality	0.1
Aspen defoliators	
Growth reduction	8.0
Miscellaneous defoliators	
Mortality	0.6
Growth reduction	0.8
Total, insects	64.7
Diseases	
Dwarf mistletoes	
Growth reduction	3.8
Hypoxylon canker	
Mortality	11.2
Decays	
Wood destruction	25.0
Miscellaneous diseases	
Mortality	4.9
Total, diseases	44.9
Total, insects and diseases	109.6

[1] *Average annual depletion, 1982-86*^{p}.

2.4 FOREST INDUSTRY, TOTAL ACTIVITY CENSUS VALUE ADDED, 1987 (MILLION DOLLARS)

Province	Logging	Wood group		Paper group		
		Sawmills	Other wood	Pulp and paper	Other paper	Total
British Columbia	1,454.5	2,498.6	590.0	2,423.0	119.2	7,085.3
Quebec	560.4	725.7	774.1	2,809.1	598.2	5,467.5
Ontario	403.9	298.1	866.6	2,095.0	1,199.0	4,862.6
New Brunswick	135.3	108.2	83.5	673.9	15.2	1,016.1
Others	181.9	257.2	345.9	886.6	176.0	1,847.6
Total	2,736.0	3,887.8	2,660.1	8,887.6	2,107.6	20,279.1

2.5 EXPORTS OF WOOD PRODUCTS, 1984-87 (MILLION DOLLARS)

Commodity	1984	1985	1986	1987
Newsprint	4,783.5	5,411.5	5,660.9	6,020.7
Lumber	4,257.1	4,594.9	4,980.3	5,848.0
Pulp	3,906.5	3,405.5	4,072.1	5,445.1
Other wood	1,298.8	1,278.1	1,342.7	1,544.7
Printing and wrapping paper	869.4	888.4	1,029.3	1,191.9
Other paper	452.1	464.8	604.8	741.1
Total	15,567.4	16,043.2	17,690.1	20,791.5

2.6 LANDINGS OF SEA AND INLAND FISH AND OTHER SEA PRODUCTS

Province or territory	1985r		1986	
	Quantity[1] t	Landed value $'000	Quantity[1] t	Landed value $'000
Newfoundland	468 219	168,670	515 464	209,603
Prince Edward Island	37 128	46,058	45 802	62,154
Nova Scotia	456 542	321,259	450 720	422,738
New Brunswick	137 071	84,904	143 033	88,167
Quebec	90 520	68,526	91 190	100,163
Ontario	26 301	31,885	25 180	46,317
Manitoba[2]	13 482	18,477	12 143	20,564
Saskatchewan[2]	3 888	3,746	3 789	3,968
Alberta[2]	1 566	1,452	1 613	1,891
British Columbia[2]	214 736	377,646	225 738	401,959
Yukon and Northwest Territories	1 298	1,507	1 530	1,406
Canada	1 450 751	1,124,130	1 516 202	1,358,930
Seafish[3]	1 402 673	1,065,769	1 470 695	1,282,104
Inland fish	48 078	58,361	45 507	76,826

[1] *Nominal catches (quantity) refer to the live weight equivalent of landings.*

[2] *Landed value includes final payments to fishermen.*

[3] *Includes only fish and shellfish. Landed value includes marine plants, aquatic mammals, livers, etc.*

2.7 LANDINGS OF THE CHIEF COMMERCIAL FISH, 1988 AND 1989

Area and species	1988^{p}		1989^{p}	
	Quantity t	Value $'000	Quantity t	Value $'000
Atlantic Coast				
Groundfish				
Cod	467 955	239,269	425 999	219,697
Haddock	31 066	28,446	26 027	25,350
Redfish	78 079	25,182	76 202	21,989
Halibut	2 571	10,849	2 364	10,145
Flatfish	73 942	36,898	70 177	39,001
Turbot	16 209	9,023	17 182	12,281
Pollock	44 335	15,142	44 463	19,799
Hake	12 800	4,396	14 258	6,509
Cusk	2 937	1,455	3 403	1,837
Catfish	2 277	616	1 998	520
Other	2 042	1,479	2 412	1,868
Sub-total, groundfish	734 213	372,755	684 485	358,996
Pelagic and other finfish				
Herring	275 531	43,721	228 815	31,613
Mackerel	23 857	6,379	20 726	5,447
Tuna	546	5,026	737	8,421
Alewife	10 469	3,047	11 187	4,185
Eel	941	3,535	874	2,882
Salmon	1 064	4,645	942	4,093
Skate	234	32	78	7
Smelt	1 778	1,500	1 684	1,380
Capelin	88 442	25,574	88 702	19,019
Other	1 782	7,460	2 255	8,767
Sub-total, pelagic and other finfish	404 644	100,919	356 000	85,814
Shellfish				
Clams	7 602	7,910	14 863	12,731
Oysters	2 285	3,968	2 453	5,446
Scallops	77 715	84,943	92 018	92,924
Squid	318	92	3 160	740
Lobster	40 492	264,881	43 481	263,680
Shrimp	37 511	69,199	43 627	74,659
Crab	31 285	99,836	23 984	46,762
Other	2 616	2,305	3 151	3,383
Sub-total, shellfish	199 824	533,133	226 737	500,325
Other sea products	—	5 622	—	11,669
Total, Atlantic Coast	1 338 681	1,012,429	1 267 222	956,804
Pacific Coast				
Groundfish				
Cod[1]	11 024	5,766	9 143	4,519
Redfish	26 803	17,059	24 453	14,983
Halibut	7 802	23,217	6 196	18,696
Flatfish	5 280	4,141	6 475	4,871
Turbot	340	88	609	116
Pollock	460	89	434	63
Hake[2]	56 335	8,909	66 100[3]	10,000
Other	8 866	21,309	9 437	17,712
Sub-total, groundfish	116 910	80,578	122 847	70,960

2.7 LANDINGS OF THE CHIEF COMMERCIAL FISH, 1988 AND 1989 (concluded)

Area and species	1988^p		1989^p	
	Quantity t	Value $'000	Quantity t	Value $'000
Pacific Coast (concluded)				
Pelagic and other finfish				
Herring	31 601	83,523	41 008	76,320
Tuna	165	512	145	380
Salmon	87 455	312,086	88 723	220,054
Skate	589	92	352	45
Other	6 008	2,393	2 774	1,022
Sub-total, pelagic and other finfish	125 818	398,606	133 002	297,822
Shellfish				
Clams	9 460	18,358	7 668	19,996
Oysters	3 702	2,725	3 473	3,409
Scallops	68	293	75	315
Squid	1	1	35	47
Shrimp	3 281	9,121	3 144	10,189
Crab	1 532	6,067	1 522	6,089
Other	5 074	4,876	539	2,076
Sub-total, shellfish	23 118	41,441	16 456	42,121
Other items	—	12,934	—	5,391
Total, Pacific Coast	265 847	533,559	272 305	416,294
Inland				
Eel	101	236	..	..
Salmon	2	2	..	..
Smelt	9 274	3,428	..	..
White bass	1 969	2,610	..	..
Sturgeon	13	87	..	..
Whitefish	9 660	14,172	..	..
Shad	1	—	..	..
Catfish	62	63	..	..
Tullibee[4]	1 514	2,341	..	..
Lake trout	923	1,382	..	..
Yellow pickerel	8 153	28,294	..	..
Pike	3 686	3,870	..	..
Perch	7 470	25,241	..	..
Carp	511	166	..	..
Burbot	35	3	..	..
Sauger	2 907	6,288	..	..
Rock bass	13	8	..	..
Sucker (mullet)	2 155	669	..	..
Sunfish	51	44	..	..
Arctic char	88	572		
Other fish	637	707	..	..
Total, Inland	49 225	90,183	49 600	86,800

[1] *Includes grey cod only.*

[2] *Includes co-operative arrangement of sales of hake to foreign vessels.*

[3] *Includes over-the-side sales to foreign vessels.*

[4] *Includes lake herring, chub and cisco.*

2.8 FRESHWATER FISHERIES, CATCHES AND LANDED VALUES, BY SPECIES, 1987 AND 1988

Species	1987		1988	
	Quantity[1] t	Value $'000	Quantity[1] t	Value $'000
Tomcod	26	20	—	—
Alewife	1 025	287	—	—
Eel	301	854	101	236
Salmon	12	19	2	2
Shad	24	25	1	
Smelt	11 596	4,179	9 274	3,428
White bass	1 348	2,492	1 969	2,610
Sturgeon	313	1,421	13	87
Whitefish	9 034	12,112	9 660	14,172
Catfish	481	576	62	63
Burbot	55	34	35	3
Tullibee[2]	1 073	610	1 514	2,341
Lake trout	861	1,378	923	1,382
Yellow pickerel	6 977	28,614	8 153	28,294
Pike	3 801	4,561	3 686	3,870
Perch	6 213	20,728	7 470	25,241
Carp	673	264	511	166
Sucker (mullet)	1 934	595	2 155	669
Sauger	2 252	5,755	2 907	6,288
Rock bass	16	11	13	8
Sunfish	94	95	51	44
Arctic char	53	460	88	572
Other fish	1 197	2,070	637	707
Total	49 359	87,160	49 225	90,183

[1] *Nominal catches (quantity) refer to live weight equivalent of landings*

[2] *Includes lake herring, chub and cisco.*

2.9 NUMBER OF REGISTERED FISHERMEN, FISH PROCESSING ESTABLISHMENTS AND EMPLOYEES, BY PROVINCE, 1985 AND 1986

Type and region	1985[r]	1986
Sea fisheries		
Newfoundland	26,564	27,075
Prince Edward Island	3,719	4,462
Nova Scotia	13,958	14,859
New Brunswick	7,466	7,688
Quebec	6,695	6,329
British Columbia	18,168	20,033
Total, sea fisheries	76,570	80,446
Freshwater fisheries		
New Brunswick	110	96
Quebec	326	199
Ontario	1,893	1,837
Prairie provinces[1]	5,921	5,850
Total, freshwater fisheries	8,250	7,982
Total, Canada	84,820	88,428

Province or territory	1985		1986	
	Establishments	Employees	Establishments	Employees
Newfoundland	96	9,134	102	9,034
Prince Edward Island	21	767	21	835
Nova Scotia	99	6,412	101	5,894
New Brunswick	70	3,963	72	3,706
Quebec	38	2,276	39	2,021
Ontario	16	[2]	19	[2]
Manitoba	1[r]	[2]	—	[2]
Saskatchewan	1	[2]	—	[2]
Alberta	1	[2]	1	[2]
British Columbia	47	3,695	47	3,170
Northwest Territories	--	[2]	--	[2]
Total, Canada	390[r]	26,964	402	24,660

[1] *Includes Northwest Territories.*

[2] *Confidential, included in Canada total.*

2.10 PELTS OF WILDLIFE FUR-BEARING ANIMALS TAKEN, BY KIND, YEARS ENDED JUNE 30, 1987-88 AND 1988-89

Kind	1987-88 fur season			1988-89 fur season		
	Pelts No.	Total value $	Average value[1] $	Pelts No.	Total value $	Average value[1] $
Badger	2,107	42,485	20.89	1,068	11,661	10.92
Bear						
White	208	313,103	1,087.16	360	476,472	1,323.53
Black or brown	3,330	179,855	54.01	1,810	112,519	62.17
Grizzly	—	—	—	—	—	—
Beaver	464,992	12,380,097	26.62	267,427	6,182,839	23.12
Cougar	—	—	—	—	—	—
Coyote	72,283	2,738,441	37.88	31,227	660,401	21.15
Ermine (weasel)	97,161	232,299	2.39	53,535	78,532	1.47
Fisher	12,664	1,949,998	153.98	9,183	851,964	92.78
Fox						
Blue	181	2,658	14.69	115	3,230	28.09
Cross and red	71,382	1,943,002	27.22	39,001	712,918	18.28
Silver	1,449	44,569	30.76	473	17,730	37.48
White	18,402	297,434	16.09	2,409	31,037	12 88
Not specified	[4]	[4]		[4]	[4]	
Lynx	6,574	2,402,393	365.44	8,265	1,967,406	238.04
Marten	269,506	27,962,999	100.39	212,488	16,772,766	78.95
Mink	125,875	5,172,707	41.09	89,621	3,557,957	39.70
Muskrat	1,654,755	6,417,276	3.68	531,929	1,192,001	2.24
Otter	22,893	848,386	37.05	15,009	593,788	38.90
Rabbit	—	—	—	—	—	—
Raccoon	137,913	2,056,881	14.91	114,094	259,737	5.89
Seal						
Fur, North Pacific[2]	.		.			
Hair[3]	.					
Skunk	301	767	2.55	188	509	2.74
Squirrel	319,875	281,277	0.79	173,012	110,713	0.64
Wildcat	1,343	200,315	149.15	952	71,836	75.40
Wolf	3,110	373,819	126.20	2,468	292,199	118.40
Wolverine	580	108,548	187.15	519	97,450	187.76
Total	3,286,884	65,949,309	. . .	1,555,153	34,055,665	. .

[1] *Average value is the price paid to trapper.*

[2] *Commonly known as Alaska fur seal: value figures are the net returns to the Canadian government for pelts sold.*

[3] *Hair seal data for Canada are confidential.*

[4] *Included in Cross and Red.*

Sources

Fisheries and Oceans Canada.
Forestry Canada.
Statistics Canada.

THE PEOPLE

Section 2

SF 1229/NFB Collection

DEMOGRAPHY

3.1 INTRODUCTION

CANADA HAS A RELATIVELY SHORT HISTORY as a nation, yet in the 125 years since Confederation the country has experienced immense changes. Population has increased 7.5 times, fertility has dropped by four-fifths and life expectancy has nearly doubled.

When the first national Census was conducted in 1871, Canada's population was about 3.7 million, and most Canadians were farmers or members of farming families. In 1990, Canada's population had risen to an estimated 26.6 million, with less than 4% engaged in agriculture.

Canadians are living longer and having fewer children; as a result, the population is "aging". Gradually, those aged 65 and over have become an increasingly larger proportion of the total population. In 1986, this group represented 11% of the population. If current trends continue, 16% of the population will be 65 or over by 2011, rising to more than 20% by 2031.

Because Canadians are having fewer children, Canadian families are becoming smaller. Since the end of World War II, Canadians have been marrying later, and recently the number of couples with no children has been increasing. Classic families have become less prevalent, and a new kind of living arrangement has appeared in the post-war era: common-law unions. These unions are becoming increasingly common, as are lone-parent families.

Changes in immigration policy since the 1960s have profoundly altered Canada's ethnic composition. In recent decades, Canada has become home to a great diversity of peoples, customs, languages and religions.

Through Canada's census — conducted every 10 years from 1871 to 1951 and every five years subsequently — it is possible to track these various changes in Canada's population.

As the *Year Book* went to press, data from the recently completed 1991 Census had not yet been compiled. Consequently, 1986 Census data are the most current available.

Notman & Son/Molson Archives/National Archives of Canada/PA-148066

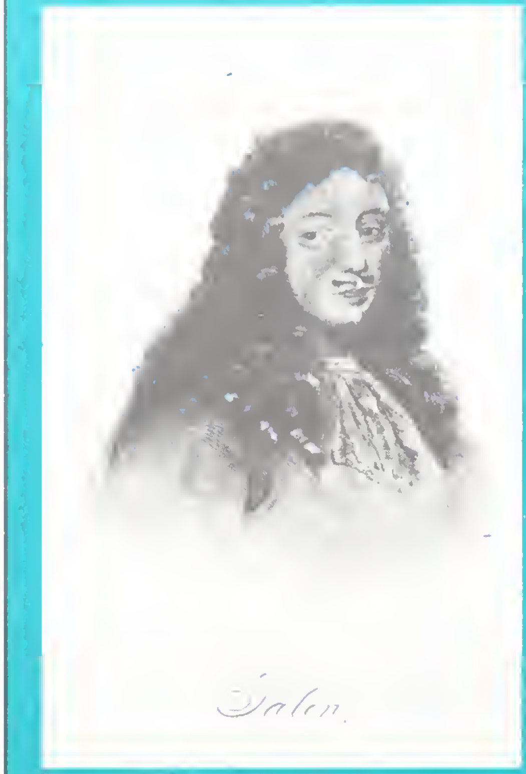
A Canadian family, circa 1890.

3.2 HISTORY OF POPULATION GROWTH

The size of a nation's population over time is determined by natural increase and net migration. Natural increase is the excess of births over deaths. Net migration is the difference between immigration *into* a country and emigration *out of* that country. From Confederation to the present, natural increase has accounted for about 80% of Canada's demographic growth.

At Confederation, the Dominion of Canada's 3.4 million population consisted chiefly of the descendants of European immigrants, Loyalists from the American colonies and relatively few native peoples. The new Dominion was truly "young" — half the population was under 20. Most Canadians lived in the Atlantic region and along the St. Lawrence–Great Lakes axis.

COUNTING SINCE 1666



Th. Hamel/National Archives of Canada/C-7100

Grand Intendant Jean Talon — Canada's first census-taker.

Since its inception 326 years ago, the Census has remained the single most comprehensive survey of information on the way Canadians live.

Canada's first census occurred in 1666, when the Great Intendant Jean Talon undertook a head count of people of New France. Talon visited many of the colony's homes himself, and his survey counted 3,215 people, excluding aboriginals and royal troops.

The 1666 Census was carried out to stimulate the demographic, economic and social development of the French colony. Designed to gather statistics on the population in general, it was also a survey of families, age, sex, marital status and occupation.

New France conducted 36 more censuses before its last in 1739. By then there were a wide range of questions about crops, livestock, buildings, churches, grist mills, sawmills, firearms and swords.

British authorities did not count the population as often after they took over; the first British-administered census took place in 1765. Others took place in different areas at irregular intervals thereafter. However, by 1851, an act requiring a general census every 10 years was established.

*The **Constitution Act** of 1867, formerly called the **British North America Act**, established the Dominion of Canada. Hard on its heels came the 1870 **Census Act**. The **Census Act** set the tone for all census-taking that followed, and many provisions are still in force. It stipulated that census figures were to determine the number of House of Commons representatives for each of the provinces and territories, and stated that censuses were to take place every 10 years.*

The first Census of the Dominion of Canada, in 1871, enumerated the population of the four original Canadian provinces — Nova Scotia, New Brunswick, Quebec and Ontario. After the data were collected, about 50 clerks took two years to manually-compile the results that were published in five bilingual volumes in 1873.

For the 1881 Census, all census-takers were required for the first time to take an oath of secrecy — a pledge still taken today. The same year, the Census was extended to include British Columbia, Manitoba and Prince Edward Island, and afterward to include any new provinces as they were created.

Canada's first permanent Census and Statistics Office was established in 1905. Until that time, the organization for each census had been created from the ground up, then disbanded. In 1915, the office of Dominion Statistician was created, following recommendations of a 1912 review commission. From that, the Dominion Bureau of Statistics was created in 1918, and renamed Statistics Canada in 1971.

Quinquennial, or mid-decade, censuses of the Prairie provinces became statutory early in the 20th century. However, by 1956, Canada's rapid economic growth and urbanization meant national demographic information was needed more often. Censuses have taken place every five years since then. The 1986 Census was the fourth national quinquennial Census.

Much has changed since Jean Talon first went door-to-door gathering information first-hand on the people of New France. Today, the Census is Canada's largest peacetime operation. In 1991, it took over 45,000 people to enumerate 26,000,000 people in more than 10 million households.

1991 • CENSUS

CENSUS DAY

June 4 • Count Yourself In!

Canada's post-Confederation demographic history can be split into five distinct periods: two of strong growth and three of low growth. These phases were linked to economic and political factors that influenced natural increase and net migration.

The first high-growth period began around the turn of the century and ended at the beginning of World War I (1914); the second began at the end of World War II (1945) and stretched into the mid-1960s. The three low-growth periods occurred from Confederation to 1900, from the beginning of the Great Depression to the end of World War II, (1930-45) and from the mid-1960s to the present.

From Confederation to the turn of the century, natural increase rates were fairly high, but emigration consistently exceeded immigration. Many immigrants into Canada were only "passing through" on their way to the US, where industry was expanding more rapidly. The agricultural regions of Eastern Canada were becoming crowded, and the promise of wage labour drew Canadians to New England and the mid-western United States. In the 1870s, the average annual population growth rate was 1.6%; by the 1890s, the rate had dropped to 1.1%, the lowest level reached before the 1970s.

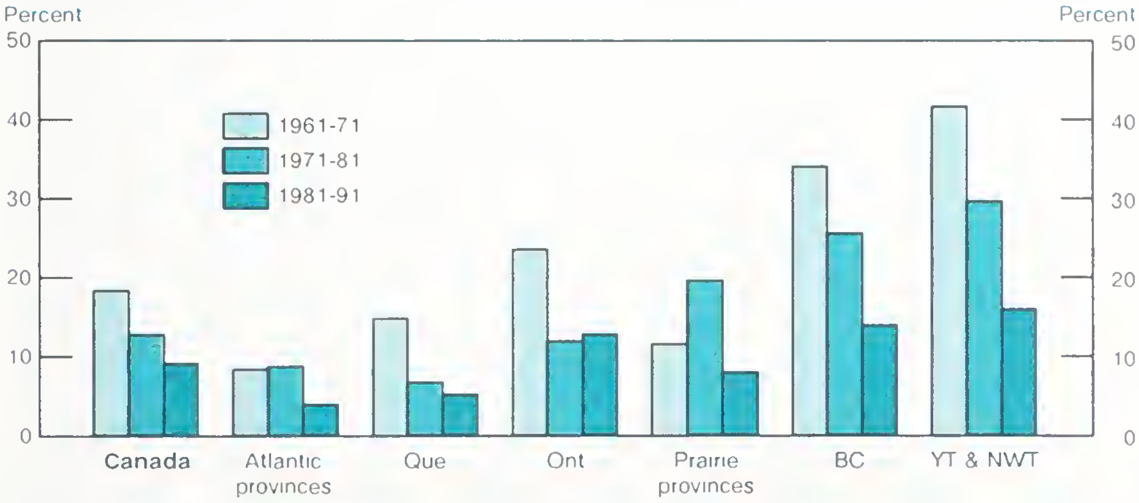
From the turn of the century to 1914, Canada's population grew at an unprecedented rate — about 3% annually. Improved hygiene coupled with better nutrition and general living conditions caused mortality rates to decline rapidly, increasing the natural increase rate. At the same time, immigration soared with the opening of the Prairies, reaching its highest level ever in 1913 — about 400,000. By comparison, Canada accepted about 55,000 immigrants in 1901.

During the Depression and World War II, Canada's annual rate of population growth declined to about 1%. From the late 1920s to the start of World War II, the birth rate declined more rapidly than the death rate. As a result, the natural increase rate declined, reaching a low of 9.7 per 1,000 population in 1937. At the same time, immigration dropped to an annual average of about 15,000.

After the war, Canadians enjoyed a period of economic prosperity that continued until the mid-1960s. The "baby boom", an unexpected surge in birth rates from the late 1940s through the 1950s, was accompanied by increased immigration, with an average of 145,000 per year from 1950 to the late 1970s.

Chart 3.1

POPULATION GROWTH RATES



Since the early 1960s, the natural increase rate has declined and immigration has passed through a succession of moderate highs and lows. The average annual rate of growth was 1.3% in the 1970s, dropping to about 1.0% from 1981 to the present. This is the lowest rate of growth the country has experienced in this century.

FERTILITY AND MORTALITY

All human populations pass through a process called demographic transition. Before the transition begins, high fertility is countered by high mortality, and the population grows slowly. The transition begins when modernization causes standards of living to rise and introduces epidemic controls and other basic public health measures. Mortality drops, which leads temporarily to rapid population growth. However, as standards of living continue to rise, the number of births declines. At the end of the transition, population growth is again slow, but now fertility and mortality rates are low.

At Confederation, the demographic transition had just begun in Canada. Fertility was still relatively high, but mortality rates had begun to decline.

Fertility Since Confederation, the trend of fertility in Canada has been a fairly regular decline, with two exceptions. During the Great Depression of the 1930s, fertility dropped sharply as a consequence of dire economic conditions, while a less explicable extreme jump occurred during the "baby boom" of the 1940s and 1950s.

MORTALITY RATES IN CANADA

Canada has a low mortality rate. However, this has not always been the case.

From 1861 to 1871, Canada's mortality rate was an estimated 21 per 1,000 inhabitants. By the early 1900s, the rate had dropped to 13 per 1,000. Today it stands at 7.3 per 1,000 inhabitants.

Hospital for Sick Children/National Archives of Canada/C-91280

Hospital scene from the 1920s.

Crude birth rates are based on the total population, and thus are affected by fluctuations in the relative proportion of female age groups over time. (For example, a population with relatively few women of reproductive age would have a low crude birth rate even if each individual woman had several children.) A more accurate fertility measure is the total fertility rate (TFR). The TFR can be thought of as the number of children each woman in a population will bear in her lifetime, based on the age-specific fertility rates for a particular year.

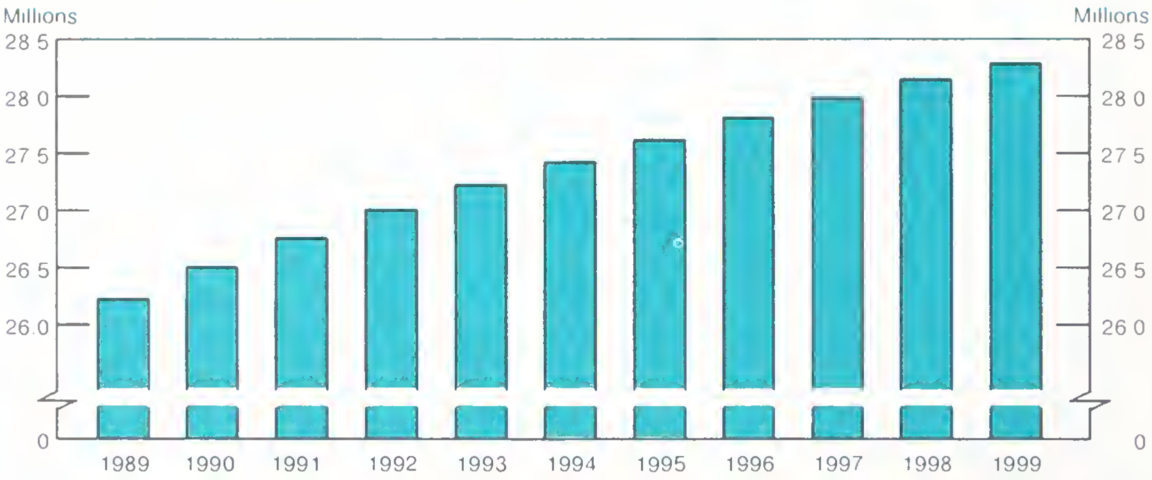
The TFR has been tending downwards since the late 1800s. Although the "baby boom" has not been the only fluctuation in this pattern, it has certainly been the most significant.

In 1921, the TFR was about 3.5, dropping to about 3.2 by the end of the decade. In the 1930s, it dropped below 3.0, reaching a low of about 2.6 in mid-decade. The rate began to rise in the early 1940s, peaking at almost 4.0 in 1959. The 1960s brought another sharp drop, which has continued more or less unabated until the present. By the late 1980s, the TFR had dropped to around 1.7, substantially below the replacement level of 2.0.

Mortality In the mid-1800s, Canada's annual crude death rate was estimated to be between 22 to 25 per 1,000 population. Mortality was high at all ages, but particularly for infants and children. In the 1830s, the infant mortality rate was about 150 per 1,000, and life expectancy was about 40 years.

Chart 3.2

POPULATION PROJECTIONS TO THE YEAR 2000

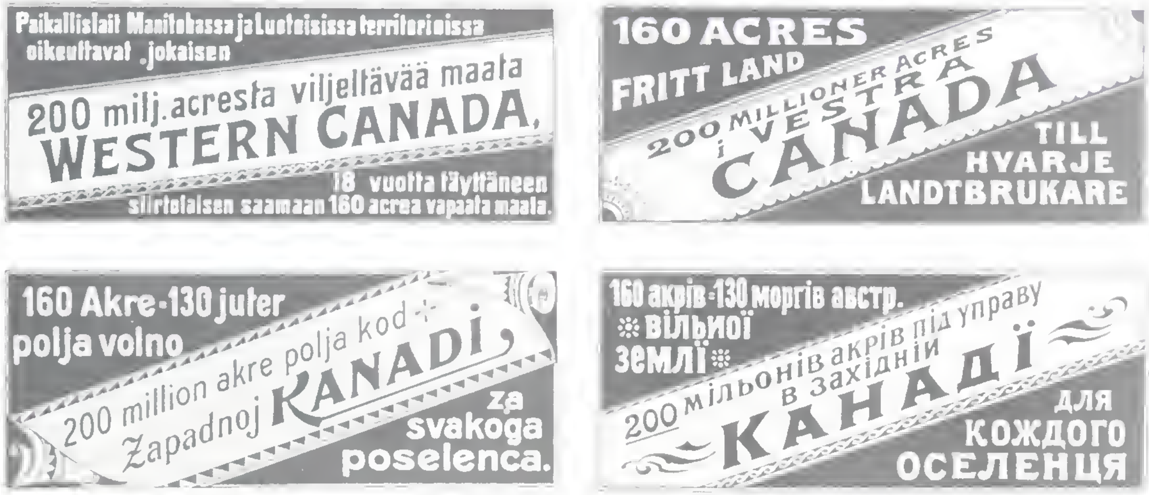


In 1921, a program for the collection of vital statistics was introduced in Canada, and a detailed picture of the nation's population could be obtained. For the years from Confederation to 1920, age at death was not registered — hence the death rates from this period tell us nothing about how long Canadians could expect to live, or what most commonly caused death in the various age groups. Life expectancy in 1921 was 58.8 years for men and 60.6 for women. The infant mortality rate was 102 per 1,000 live births, and the death rate was 13 per 1,000.

Canada's death rate of about 7.3 is comparable with the rates of other industrialized Western countries, but is surprisingly higher than rates in many developing countries. This is because the populations of these countries are dominated by younger age groups, while in Canada and other Western countries young age groups account for a declining proportion of the population. A more useful measure for gauging the general well-being of a population is life expectancy at birth.

Canada's life expectancy is among the highest in the world. Females born in Canada between 1985 and 1987 can expect to live for almost 80 years, while males can expect to live for about 73 years. Since 1920-22, this is an increase of 19 years for females and 14 years for males.

Infant mortality When official death rates were first available in 1921, infant mortality had already dropped to 102 per 1,000 live births. With urbanization and improved sanitation and medical services, the rate had dropped to 9.6 by 1981, less than one-tenth the 1921 level. In 1988, the rate was 7.3 — the second lowest rate in the world, after Sweden.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WESTERN CANADA,
18 vuotta täyttäneen
siirtolaisen saamaan 160 acrea vapaata maata.
160 ACRES
FRITT LAND
200 MILLIONER ACRES
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CANADA
TILL
HVARJE
LANDTBRUKARE
160 Akre-130 juter
polja volno
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Zapadnoj KANADI,
za
svakoga
poselenca.
160 акрів-130 моргів австр.
вільиої
землї
200 мільонів акрів під управу
в західнии
КАНАДї
для
кождого
оселенця

National Archives of Canada/C-6196, C-89633, C-89536, C-89542

The "Best West" campaign offered free land to all settlers in 13 different languages.

MIGRATION

Immigration has increased Canada's population while providing the nation with a rich variety of cultural, religious, linguistic and economic characteristics.

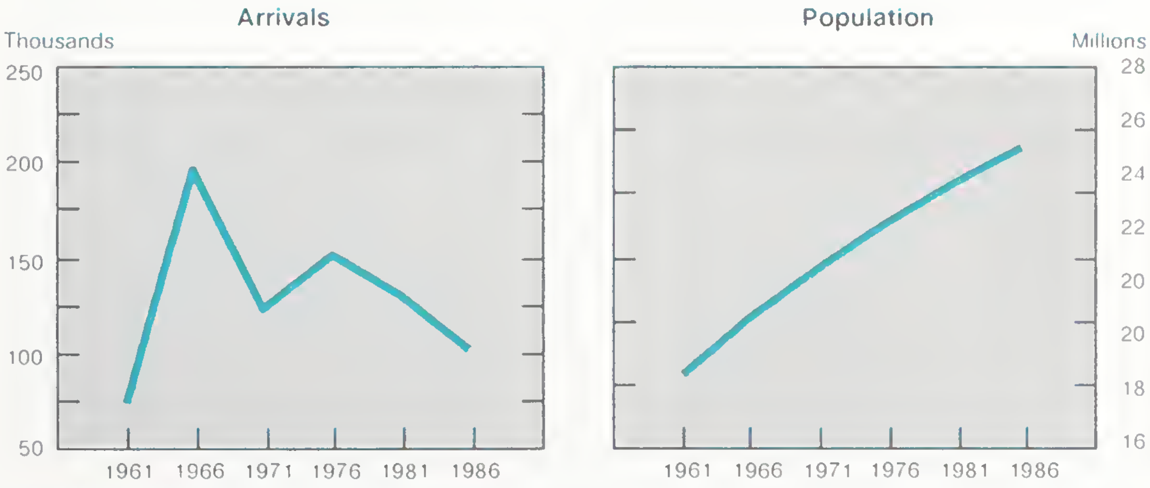
In 1867, almost half of Canada's population had arrived in the country after 1850. Readily-available land and liberal immigration policies had attracted about 1.5 million immigrants by the turn of the century, the majority coming from the British Isles.

Canada's largest wave of immigration occurred from 1910 to 1914, when systematic recruitment through offices across Europe and the British Isles attracted some three million settlers, most of whom settled on the Prairies. The government's goal was to open the west to agriculture, and attempts were made to encourage the entry of agricultural workers. However, the success of this policy was limited.

Immigration declined drastically during World War I. After the war, policy favoured well-established farmers because easily developed land had become scarce. Unemployment in the US and high transportation costs also contributed to the decline.

Chart 3.3

IMMIGRANT ARRIVALS AS COMPARED TO TOTAL POPULATION



After 1923, immigration again picked up. Mennonite, Romanian and Jewish immigrants were among the arrivals, and reactivated recruitment offices in Northern and Western Europe attracted increasing numbers of emigrating Norwegians, Swedes, Danes and British subjects.

After the economic crisis of 1929, immigration slowed to a trickle, stopping altogether when World War II began. At the end of the war, Canada and other nations accepted large numbers of Europeans displaced by the war and by subsequent political upheaval.

THE LAST, BEST WEST

Towards the end of the 19th century, the Canadian government undertook a vigorous campaign to attract settlers to Western Canada. Drawing on the widespread belief that the last good, free land in the American west had already been settled, Canadian officials came up with the slogan "the Last, Best West" to describe the Canadian west. Millions of pamphlets were sent out to prospective immigrants in the United States and Europe.

The campaign, combined with recent agricultural advances which were helping to turn the Prairies into an important grain-producing area, made the Canadian west an attractive destination for those seeking land and a fresh start. Immigration shot up from about 50,000 in 1901 to nearly 130,000 in 1903, and reached over 400,000 by 1913, although it dropped precipitously during World War I.

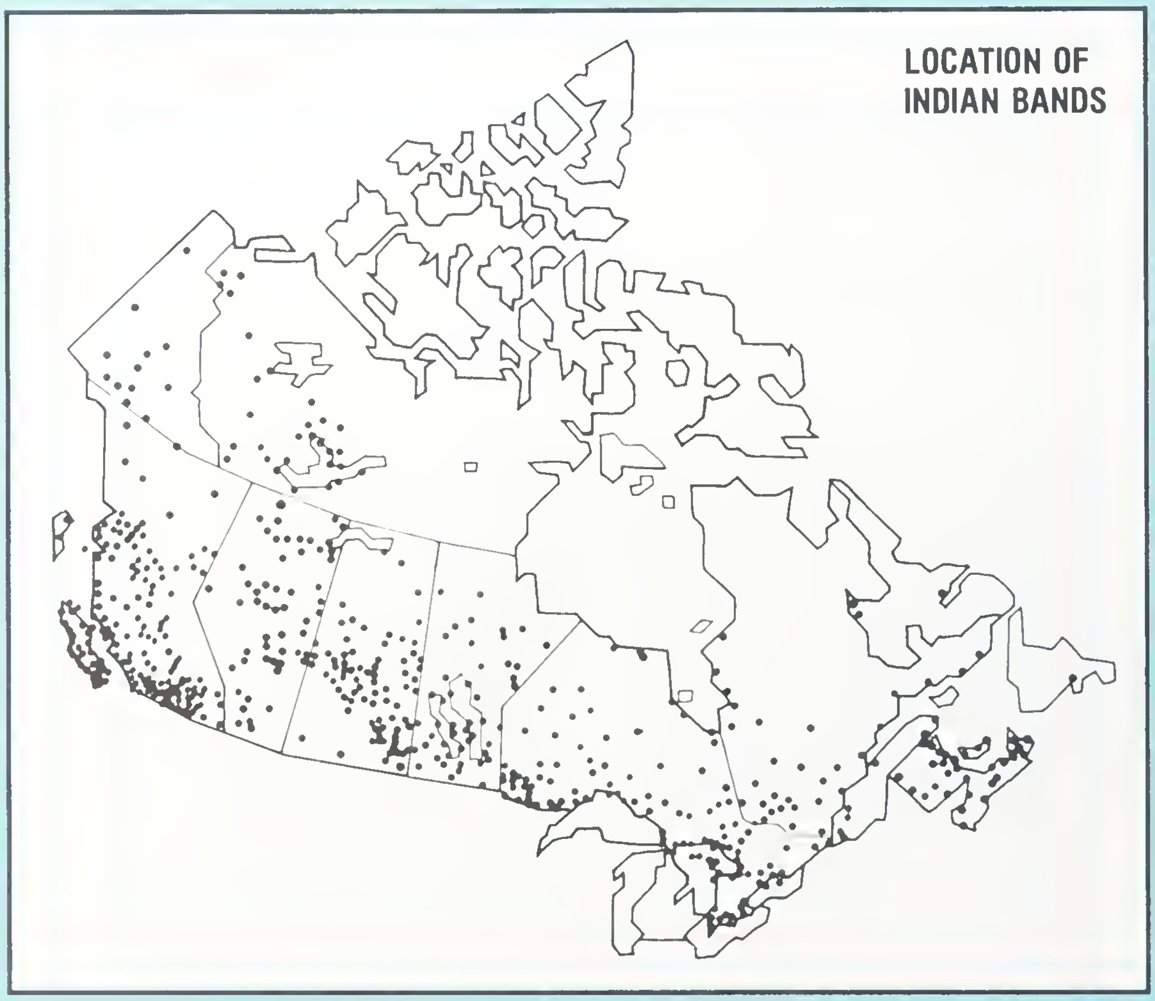
Before the war, however, Canadian cities experienced phenomenal growth: from 1901 to 1919, Winnipeg's population grew from 42,000 to 200,000. In the same period, that of Calgary climbed from under 5,000 to 75,000; that of Edmonton from 2,500 to 40,000; and that of Vancouver from 27,000 to 123,000.

Indian and Northern Affairs Canada

Old and young, Grassy Narrows, Ontario.

CANADA'S FIRST PEOPLES, TODAY

- *There are 598 Indian bands in Canada, located on 2,284 reserves and Crown lands. Together, these reserves cover 6.5 million acres, roughly half the size of Nova Scotia.*
- *Average Indian band membership is about 780 people. Several bands have less than 50 members. The largest band, Six Nations of the Grand River, has around 15,000 members.*
- *There are now more than 466,337 status Indians, more than double the number 25 years ago. Status Indians form 1.7% of the Canadian population, and are predicted to form 2.2% of the population by the year 2000.*
- *Between 1981 and 1986, the average annual rate of growth among the registered Indian population was almost five times that of the general Canadian population. There were three major factors: improved health conditions, a high birth rate and 1985 amendments to the Indian Act which restored status to people who had lost it through sexual and other forms of discrimination under the old* ***Indian Act.***
- *The Indian population is young. About 59% of registered Indians are younger than 25, compared to only 37% among all Canadians. Only 4% of status Indians were over 65, while in the general population this age group accounted for almost 11%.*
- *About 60% of Indians live in rural Canada on reserves. Roughly one in five lives in remote areas with no year-round road to the nearest town.*



Indian and Northern Affairs Canada

- *Before 1960, Indians did not have the right to vote in federal elections. Today they participate at all levels of Canadian political life.*
- *Until the 1960s, officials of the federal government, called Indian agents, controlled virtually every aspect of Indian life. Today, community-selected band councils manage community affairs, including direct administration of more than $1.6 billion in Department of Indian Affairs and Northern Development (DIAND) funds — 72% of DIAND's total Indian and Inuit Affairs spending.*
- *In the 1980s, the Canadian Parliament passed two acts to establish special self-government regimes for nine Cree and Naskapi bands of Quebec and the Sechelt Band in British Columbia. More than 100 other bands are currently working on developing their own approaches to self-government.*
- *In 1965, less than half of the houses on Indian reserves had electricity; only one in six had a safe water supply; and piped water and sewage systems were rare. By 1989, some 85% of reserve houses had running water; 77% had sewers or septic tanks.*
- *The unemployment rate among Indians is more than three times that for all Canadians. Fewer than three of every 10 Indians on-reserve over 15 years old are employed, compared to six of every 10 for the general population. (Note: Many Indians who are not "employed" in the market economy are involved in traditional hunting and fishing pursuits that economically benefit them and their communities.)*
- *Indians' life expectancy is on average about eight years shorter than in the general population, but the gap is diminishing rapidly. Death by suicide is two and a half times more common and death from injury and poisoning is four times more common among Indians than among the general population.*
- *Roughly 46% of all Indians on-reserve depend on social assistance to provide their basic needs.*
- *Between 1978 and 1985, life expectancy at birth for Indian males increased by 2.4 years, from 61.6 to 64.0 years; for females it increased by 3.9 years, from 68.9 to 72.8 years.*
- *The infant mortality rate among Indians fell from 82 per 1,000 in 1960 to 16 per 1,000 in 1986.*
- *Some 40% of all Indian students attend band-operated schools in which their communities influence curriculum, up from 8% less than a decade ago.*
- *About 50% of Indian elementary and secondary students now receive some instruction in their native languages.*
- *In the early 1960s, fewer than 4% of Indian students who began Grade 1 finished Grade 12. Today the success rate is over eight times greater.*
- *In the early 1960s, there were 60 Indian university students in all of Canada. By 1985, this had increased to 5,800. Taking all forms of postsecondary education into account, more than 18,500 Indian students were enrolled in 1990.*
- *There are more than 5,000 active Indian businesses, of which 3,000, or 60%, are located on-reserve and individually owned. About half were established since 1985, many with federal assistance. Most are now self-sustaining.*
- *Roughly 100 people were directly employed by band governments 25 years ago. Transfer of responsibility for band administration, social welfare, education and the like has increased that to more than 16,000 band employees.*

Richard Harrington/National Archives of Canada/PA 166823

Inuit woman sewing with child, Padlei, NWT, 1949-50.

B. J. Woodruff/National Archives of Canada/C-15020

Canadians-to-be on the Empress of Britain, 1911.

Edwards and Harrison/National Archives of Canada/PA 148297

New Canadians picnicking, Wilno, Ontario, 1890.

By the 1950s, Canada's rapidly diversifying economy had created a strong demand for industrial workers. The focus of immigration switched from farmers to skilled factory workers coming from Germany, Italy, the Netherlands, Portugal and other European countries.

In the 1960s, Canada introduced a new immigrant selection process. In the past, the selection criteria had been mostly ethnic or racial origin. The new system was based on merit, with each candidate given a point ranking for education, job skills, and other relevant factors. As a consequence of this change, the majority of Canada's immigrants now come from Asia rather than Europe.

In recent decades, Canada has given special status to refugees fleeing political oppression, war or other forms of civil strife. In 1986, Canada was awarded the Nansen Medal by the United Nations in recognition of its refugee efforts.

In the 1960s and 1970s, immigration averaged about 140,000 annually, with year-to-year levels fluctuating according to economic conditions. In the wake of the 1981-82 recession, levels dropped to a low of about 88,000 in 1984. Since 1985, the government has gradually increased levels, which reached a high of 192,000 by 1989.

In the 1980s, the major source regions for immigrants to Canada have been Southeast Asia, Southern Asia and Northern Europe. The provinces receiving the largest numbers of international immigrants in recent years were Ontario (48%), Quebec (16%), British Columbia (15%) and Alberta (12%).

Internal migration As people move from one place to another within a country's borders, they influence population growth and have marked effects on regional economies. This migration may include moving from one province or economic region to another, from rural to urban centres, or from one metropolitan area to another.

Not surprisingly, regions with relatively strong economies or mild climates tend to attract Canadians from less-favoured regions. This can be seen both over the short and long term.

In 1986, about 3.5 million Canadians (15%) were residing in a province other than the one where they were born. Only Ontario, Alberta, British Columbia and Northwest Territories had net gains of migrants. Quebec and Newfoundland had particularly low levels of residents born in other provinces — 4.4% and 4.5%, respectively.

Canadians are enthusiastic movers. In 1986, about one million Canadians (4%) lived in a different province than they had five years earlier. The greatest number had moved to Ontario (31%), followed by Alberta (19%) and British Columbia (16%). However, this traffic was not one-way: for example, more people moved out of Alberta than moved in. Only Ontario, British Columbia and Prince Edward Island had positive balances.

Canadians also move from one residence to another with remarkable frequency. From 1971 to 1986, almost half of all Canadians changed their place of residence every five years.

3.3 POPULATION REDISTRIBUTION

The geographic distribution of Canada's population is continually changing, but the general trend is a shift from East to West.

In 1901, the Atlantic provinces and Ontario accounted for about 17% of Canada's total population. By 1986, their share had dropped to 9%. In the same period, Ontario's share of total population dropped from 41% to 36%, and Quebec's share fell from 31% to 26%. By contrast, British Columbia's share climbed from 3% to more than 11%.

The most dramatic change occurred on the Prairies during "the opening of the West". From 1901 to 1921, the Prairie provinces' share of Canada's population rose from 8% to 22%. This rapid growth could not be sustained for long, and by the end of the 1930s the region's share of total population actually began to decline. In 1986, the Prairies accounted for about 18% of Canada's population.

HOW WE SPEND OUR TIME

When Canadians hear the phrase "At the beginning of the long dash . . .", they next expect to hear the correct time of day. This phrase, first introduced by the Dominion Observatory in 1941, is a national reminder of the time of day. But what are we doing when we hear it? How are we spending the time of day?

According to 1986 data, we spent an average of 11 hours a day on personal activities such as sleeping, eating and washing, and slightly more than three and a half hours a day in paid work and related activity. (The data were averaged over a seven-day week.)

We spent another two hours on domestic activities, and about a half an hour on child care. Shopping and related activities took up an hour while another hour went toward education-related activity (again, averaged over the week).

We spent most of our leisure time watching broadcast television or recorded videos, listening to radio or records, or reading books, magazines or newspapers. On average, we spent more than three hours a day on these activities.

When we travel, we tend to prefer cars. In 1986, we averaged 54 minutes a day in the car, but spent only 12 minutes a day walking and only nine minutes on public transit.

Time spent with our spouses ran an average of three and a half hours a day, with our children, two hours, and with other family members, an hour and a half. However, we tended to spend more time on our own than with other people. On average, we were alone four and a half hours every day, not including time spent sleeping or on other personal activities — males averaged slightly less, and females slightly more. Females aged 15 to 24 spent the least time (less than three and a half hours) alone, while females aged 65 and over spent the most time (close to seven hours) alone.

It would appear that for Canadians, the phrase "the beginning of the long dash" is not only an introduction to the time of day, it is also an ironic reference to the speed with which our days go by.

URBANIZATION AND CENSUS METROPOLITAN AREAS

In 1851, only about 13% of the Canadian population lived in urban regions. Although the actual size of the rural population did not begin to decline until 1951, Canada's urbanization rate has increased constantly.

However, this process occurred at different rates in the provinces. By 1921, half of the populations in British Columbia, Ontario and Quebec lived in an urban environment. Nova Scotia reached this point in 1941, Manitoba in 1951, Alberta and Newfoundland in 1961, and New Brunswick and Saskatchewan in 1971. In Prince Edward Island, the majority of the population is still rural.

The percentage of urban population also varies by province. In Ontario, British Columbia and Alberta, almost 80% of their population live in urban environments. The Atlantic provinces are less urbanized; for example, only 39% of Prince Edward Island's population lives in an urban area.

One of the categories used to present census data is the Census Metropolitan Area (CMA), which refers to the main labour market area of an urban centre with at least 100,000 population. In 1986, the combined population of the top 10 CMAs was 12,134,166, 2.4 times larger than in 1951. Toronto's CMA population was 2.7 times larger than it was in 1951, that of Vancouver increased 2.4 times and that of Montreal increased 1.9 times. Calgary's CMA population has grown the most, to 4.7 times its 1951 size.

Increased urbanization is also reflected in the rising number of incorporated cities and towns (more than 50,000 population). In 1951, there were 43 incorporated cities, with a combined population of 3,849,375 — 27% of Canada's total population. In 1986, Canada's 68 incorporated cities had a combined population of 11,527,559 — 45% of the country's population.

F. Curylo/National Archives of Canada/C 25148

Family snapshot predating Confederation.

Despite this general increase, some CMAs have experienced periods of declining population. For example, more people left the Calgary and Edmonton CMAs in the early 1980s than arrived from other Canadian locations. From 1981 to 1986, Edmonton's CMA recorded a net outflow of 15,555; from 1976 to 1981, it had recorded a net inflow of 34,975. Similarly, the Calgary CMA had an outflow of 6,105 residents from 1981 to 1986 after an inflow of 66,460 from 1976 to 1981. These shifts in Alberta were parallelled by declines from 1976 to 1981 in the population of Canada's four largest CMAs — Toronto, Montreal, Vancouver, and Ottawa–Hull — followed by increases from 1981 to 1986.

Less than one-third of Canada's total population lived in the three largest metropolitan areas (Toronto, Montreal and Vancouver) in 1986; however, more than half of the immigrant population lived in these CMAs. In Quebec, 87% of the province's immigrant population lived in the Montreal CMA, compared to 45% of the total provincial population. In Ontario, 59% of the immigrant population lived in Toronto's metropolitan area, compared to 38% of the provincial population. In British Columbia, 62% of the province's immigrant population lived in the Vancouver CMA, compared to 48% of the provincial population.

3.4 CANADIAN HOUSEHOLDS AND FAMILIES

In 1986, four out of every five Canadians lived in a family as a husband, wife, common-law partner, parent or child.

This accounts for a substantial majority of the population, but the proportion of Canadians not living in families has increased by 10% since the early 1950s.

In 1986, there were 6.7 million families in Canada, a 6% increase from 6.3 million in 1981. This growth was moderate compared to the double-digit increases reported for every other five-year Census period on record, with the exception of 1961-66. This is a reflection of the progressively aging population, the increasing number of persons living alone, and the increasing average age at marriage.

Although there are more Canadian families, they have on average fewer members. In 1961, the average family comprised 3.9 persons; by 1986, this had dropped to 3.1 persons as the result of a number of factors, including declining fertility, the increasing tendency of young people to leave their parental homes, and increases in lone-parent families, in childbearing out of wedlock and in widowhood.

In 1986, 13% of all families were headed by a single parent, a one-fifth increase from 1981. Almost 1.4 million children lived in these households, an increase of 12% since 1981 and of 30% since 1976. Children in lone-parent families represented 16% of all children living at home in 1986, up from 14% in 1981 and 12% in 1976. From 1976 to 1986, the number of children living with a male lone parent increased by 41%, compared to a 29% increase in the number of children in female lone-parent families.

From 1971 to 1986, the number of people living alone doubled in the 25 to 44 age group. However, women aged 60 or older still accounted for the majority of Canadians living alone.

In recent decades there has been an increase in the number of elderly Canadians living in institutions (hospitals, psychiatric hospitals, special care or treatment centres, facilities for the elderly or chronically ill or residences for the physically handicapped). The proportion among men rose from 4.5% in 1971 to 5.4% in 1986; for women, it rose from 6.8% to 9.1%. This is a direct consequence of the "aging" of the population — people older than 75 are more likely to live in institutions, and the proportion of people in this age group is growing steadily.

3.5 MARRIAGE AND DIVORCE

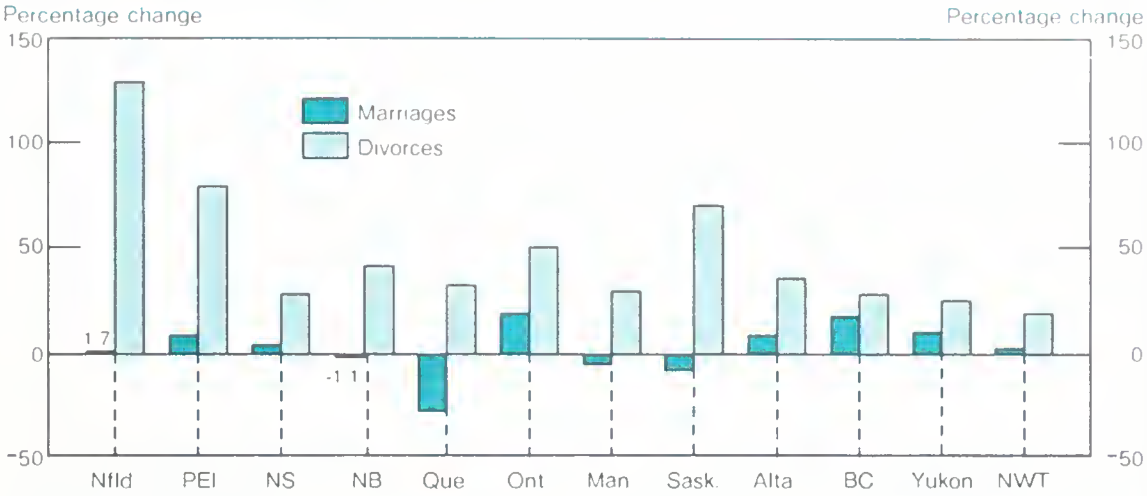
MARRIAGE

Around the time of Confederation, marriage in Canada tended to occur relatively late in life, and a substantial number of Canadians did not marry.

The generation with the highest marriage rates in this period was born around 1840. For this group, the average age at marriage was 28.1 years for men and 25.4 years for women, and 10.0% of men and 10.5% of women did not marry at all. For Canadians born around 1875, the non-marriage proportion was even higher, with 13.6% of men and 11% of women remaining single at the age of 50.

Chart 3.4

PERCENTAGE CHANGE IN MARRIAGES AND DIVORCES, 1978-89



Detailed marriage statistics for 1921 to the present make it clear that Canada's marriage rate has been strongly affected by political and economic events.

During the Great Depression of the 1930s, unemployment and other economic hardships led to many marriages being postponed or cancelled altogether. The total marriage rate, a comparative measure that highlights changes over time, fell to a low of 653 per 1,000 men and to 660 per 1,000 women. By the end of the decade, the rate had stabilized at a slightly higher level.

The onset of World War II brought an unprecedented increase in marriages, partly due to young Canadians hoping to avoid military conscription. In 1942, the index reached 1,228 for men and 1,212 for women. The index was also particularly high in 1946 and 1947 due to marriages that had been postponed from 1943 to 1945.

Gauvin, Gentzel Ltd Winnipeg/L.B. Pearson/National Archives of Canada/C 68799

A double wedding, 1925. One of the grooms is Lester Pearson, who became Canada's 19th prime minister in 1963. His bride: Maryon Moody. Also marrying: Norman Young and Grace Moody.

DIVORCE

In 1868, only three divorces were granted within the entire Dominion of Canada. In fact, prior to World War II, Canada had one of the lowest divorce rates in the western world.

Access to divorce was extremely limited until 1968. However, increasing public pressure finally led to the introduction of a new federal divorce law on July 2, 1968. Previously, the only acceptable reason for divorce was adultery; but under the new law there were 16 different grounds for divorce, including mental and physical cruelty and desertion.

The impact of the legislation was significant. In 1969, 26,079 divorces were granted compared to 11,343 in 1968. The divorce rate more than doubled, jumping from 54.7 (per 100,000) to 137. By 1989, the divorce rate was 307.8 per 100,000 population.

Throughout the 1950s and 1960s, the marriage rate remained high, and most Canadians married young — an average of 25 years for men and 22.5 years for women. In this prosperous, confident period, only about 5%, of Canadians remained single at age 50. Marriage had become early and virtually universal.

Since the early 1970s, the marriage rate has declined steadily while the average age at marriage has risen. Once again, Canadians seem to have returned to a pattern of delayed, non-universal marriage.

COMMON-LAW UNIONS

Although today's marriage patterns are similar to those at the turn of the century, the causes are quite different.

For example, common-law marriages were almost non-existent before the end of World War II. In recent decades, this form of union has become increasingly popular, particularly with young Canadians and divorced Canadians. Many common-law unions eventually result in marriage, but others are intended to be permanent arrangements.

Results from a 1990 survey of married Canadians indicate the increasing prevalence of common-law unions. Before their marriages, 37% of the 18-29 age group, 28% of the 30-39 age group and 12% of the 40-49 age group had lived common-law. From 1984 to 1990, the proportion of Canadians aged 18 to 64 who had lived in a common-law union increased from 17% to 28%.

DIVORCES

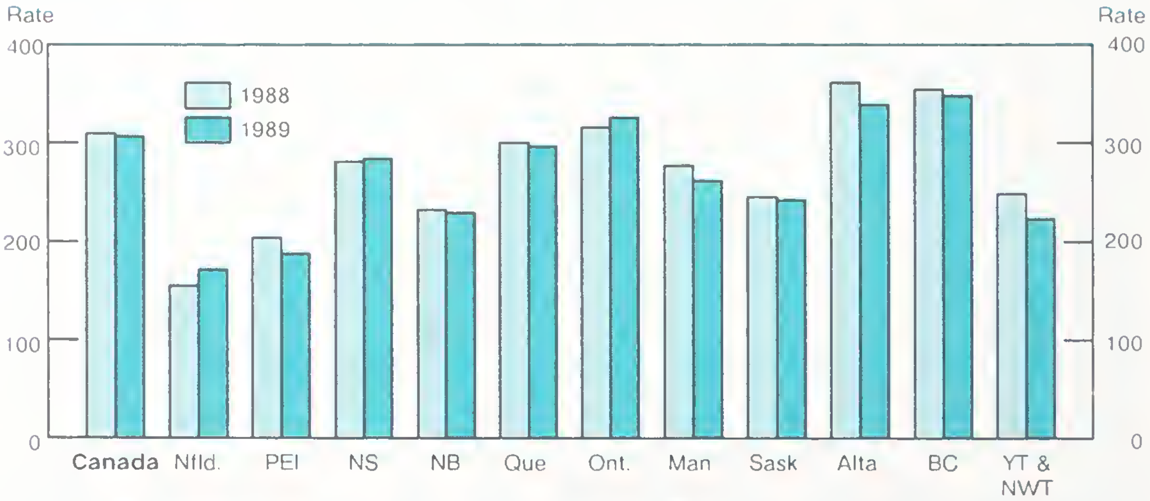
About 15% of Canadians who married in 1960 had ended their marriage by 1985. Of Canadians who married in 1970, 27% can expect to be divorced within 25 years.

Before Canada's divorce laws were liberalized in 1968, divorces were rare. Since then, the divorce rate (a comparative measure of change over time) has soared from 137 divorces per 1,000 marriages in 1969 to 331 per 1,000 in 1984. Although further changes to Canada's divorce law introduced in 1985 make it impossible to know whether particularly high rates in the late 1980s were caused by the new law or by a continuing trend, low rates clearly belong to Canada's past.

The main grounds for divorce in 1988 were separation, adultery, mental cruelty and physical cruelty. Eighty-six percent of people granted divorces had never been divorced before, while 1% had been widowed.

Chart 3.5

DIVORCE RATES IN CANADA (PER 1,000 POPULATION)



The majority of divorces occur within the first 10 years of marriage. Marriages of less than five years duration account for 18.6% of all divorces, while marriages lasting between five and nine years account for 27.4% of the total. This is partly because common-law unions before marriage lengthen the time spent living together while reducing the duration of marriages, and partly because the number of marriages with at least one divorced partner is increasing — these marriages are more likely to fail than those between previously unmarried partners.

3.6 ETHNICITY

In the 1986 Census, respondents were asked to indicate which ethnic group or groups they belonged to. About three-quarters of respondents claimed a single ethnic origin; the remainder cited a combination of origins.

British and French In 1986, British and French were the dominant ethnic groups in Canada, comprising 34% and 24%, respectively, of the population. A combination of British and French origins accounted for another 5%, while 13% reported combinations of British and/or French and other origins. In 1901, 57% of Canadians were British, 31% were French, and only 12% cited other origins.

In 1986, a quarter of Canadians reported neither French nor British backgrounds. Just under 38% cited an ethnic background that included a mixture of British and French as well as non-British and non-French origins.

Ethnic diversity varies across Canada. In 1986, Newfoundland had the highest level of British origins (89%), Quebec had the highest level of French origins (78%), while the sizable aboriginal population in the Northwest Territories gave this region the highest level of non-British, non-French origins (64%).

The highest levels of British and French dual response were in Prince Edward Island (12%), New Brunswick (10%), and Nova Scotia (9%). The highest levels of multiple ethnic origins including non-British and non-French groups were cited in Western Canada — more than 20% of the population in Saskatchewan, Alberta, British Columbia and the Yukon.

In the past, most Canadians with non-British, non-French origins came from other European countries. In 1931, Europeans accounted for 88% of Canada's non-British, non-French population. When increasing numbers of non-European immigrants began to arrive in the 1970s and 1980s, this proportion began to drop, reaching 63% by 1986.

Asian immigration began to increase in 1971; by 1986, the Asian proportion of Canada's population had risen from 5% to 16%. During the same period, the proportion of persons of black ancestry increased from 1% to 3%. In Nova Scotia, 11% of the non-British, non-French population cited black ancestry, nearly three times higher than the national average.

Canadians with Asian and black origins have long been part of Canada's ethnic mosaic, but their numbers were relatively small until the 1970s. Early immigration laws prevented large-scale Asian immigration, although several thousand Asian labourers were brought to Canada in the 1880s to work on the western portions of the Canadian Pacific Railway. Today there are Asian communities across Canada.

Persons of black ancestry have lived in Canada for nearly 300 years. At first, most settled in Nova Scotia and Ontario. Since the late 1960s, however, blacks have come to Canada from Africa and the Caribbean, and there are now sizable black communities in Montreal, Toronto and Halifax.

Aboriginal peoples At the turn of the century, aboriginal peoples comprised 19% of the non-British, non-French population. By 1986, this proportion had dropped to 6%. In 1986, 711,700 Canadians, or 3% of the total population, reported having aboriginal origins. Of this group, 53% reported a single aboriginal origin and 47% indicated aboriginal as well as non-aboriginal origins.

In Quebec, Ontario and the Atlantic provinces, the aboriginal population accounted for less than 2% of the total population. It accounted for 4% of the total population in Alberta and British Columbia, about 8% in Manitoba and Saskatchewan, and slightly more than 21% in the Yukon Territory. In the Northwest Territories, 59% of the population cited aboriginal origins.

Among aboriginal peoples, 58% were under age 25, compared to 37% of the total Canadian population. Conversely, less than 3% of the aboriginal population was over 65, compared to 10% of the total Canadian population. This high proportion of children and youth in the aboriginal population is expected to continue into the 1990s, forming an opposite pattern to Canada's general age structure.

National Archives of Canada/PA 140976

Nootka tribal chief Joseph John, circa 1941, Tofino, BC.

HISTORY OF INDIAN POLICY IN CANADA

The aboriginal peoples of Canada have enjoyed the use and occupancy of the lands of North America since time immemorial. Long before the arrival of the Europeans, the aboriginal people had established themselves in fixed areas and hunting grounds. Some had developed an agricultural base through domestic cultivation and all had established set tribal groups with distinct social, cultural and linguistic traits.

The Indian cultures and lifestyles across what is now known as Canada varied significantly at the time of first contact with Europeans as shown by the linguistic distribution of Indians across Canada at this time. Some tribes were sedentary and agricultural (for example, the Hurons in the "Ontario" area), some migratory, relying on hunting and gathering (the Plains Indians). Some tribes carried out domestic cultivation of corn, beans and squash, while others relied almost totally on single resources such as buffalo or sea products. The Europeans' interest in the Indians tended to begin with fur trading and then changed to a desire for Indians to cede their interests to enable settlers to cultivate the land. Over time, the same process repeated itself as the Europeans came in contact with each new and more westerly or northerly group.

In 1755, the first government department for dealing with aboriginal affairs was established. The British Indian Department, parent of the present Department of Indian Affairs and Northern Development, was concerned primarily with courting and maintaining the allegiance of the aboriginal people to His Majesty's interests.

British policy recognized an Indian interest in unceded lands. The Royal Proclamation of 1763 stated that European settlers were not allowed to inhabit certain areas until Indian occupants had surrendered their interest through treaties negotiated with the Crown.

British representatives and Indian groups entered treaties, which set aside reserves and gave benefits, usually "presents", to the people who surrendered title. There were 31 treaties signed between 1764 and 1862.

After Confederation, between 1871 and 1921, the Government of Canada and Indian groups signed a series of numbered treaties (Numbers One to Eleven) covering the fertile belt between Lake Superior and the Rocky Mountains. These treaties were similar, generally providing reserve lands and monetary payments.

At Confederation, the ***Constitution Act****, 1867, gave the new federal government legislative authority over "Indians and lands reserved for the Indians". Canada's first consolidated* ***Indian Act*** *of 1876 set the British precedent into legislation; Indians were to get some special protection until they were assimilated.*

In the late 1940s, a Joint Parliamentary Committee was struck to revise the ***Indian Act****. During hearings of this committee, Indians forcefully expressed their people's desire for equality and the maintenance of their cultural heritage. But the revised* ***Indian Act*** *of 1951 mirrored its predecessor, removing only minor irritants such as a ban on potlatch ceremonies.*

3.7 LANGUAGE

Canada's changing linguistic profile parallels the growth and diversification of the country's population. In this section, data on mother tongue (first language learned and still understood) from the 1941 and the 1986 censuses are compared.

In 1986, 62.1% of Canadians cited English as their mother tongue. In 1941, English had been cited as a first language by 56.4% of the population. During the same period, the proportion of the population citing French as their mother tongue declined from 29.2% to 25.1%.

In 1969, a government White Paper on Indian Policy called again for integration of Indian people into Canadian culture while preserving some unique aspects of Indian life and protecting Indian lands. Indian spokespersons rejected it, and it was withdrawn in 1970, but it had served as a catalyst, causing Indian groups to organize to protect Indian interests.

*In the 1970s and 1980s, federal policy changed to give Indians more control over their community affairs. An attempt by a joint National Indian Brotherhood/Cabinet committee to amend the **Indian Act** failed, but the federal government set up a policy to transfer more responsibility for programs and services to Indian councils. Programs became more locally responsive, and Indian communities developed administrative skills to manage them, although bands still had limited real authority.*

Native interest in economic development and business began to expand. Native claims activities also increased when the government decided to negotiate Indian and Inuit claims.

Native claims have been negotiated using both comprehensive and specific claims policies. Comprehensive claims are based on the concept of continuing aboriginal title which has not been dealt with by treaty or other legal means. Specific claims have to do with historical wrongdoing in government administration of land or other assets. Since the mid-1970s, comprehensive land claims, often called "modern-day treaties" have been settled with the Cree, Naskapi, Inuit of northern Quebec, and the Inuvialuit of the Western Arctic.

*With the **Constitution Act**, 1982, Canada's patriated constitution recognized existing aboriginal and treaty rights; promised a series of First Ministers Conferences on self-government and other aboriginal issues; and defined Canada's aboriginal peoples as Indians, Inuit and Metis.*

Since 1984 policies have been aimed at strengthening Indian autonomy in society, while emphasizing self-sufficient Indian communities able to govern themselves within the Canadian constitutional framework.

In 1985 the government approved a "two-track" strategy for Indian self-government. On one track were to run new efforts to reach a constitutional amendment on native self-government, on the other, new ways to provide communities with the means to run their own programs and administration.

*In the same year, Bill C-31 amended the **Indian Act** to align it with the **Canadian Charter of Rights and Freedoms**. Bill C-31 was designed to remove discrimination on the basis of gender from the act, to restore Indian status and band membership rights to eligible persons, especially women who had lost their status by marrying non-Indians, and to enable bands to assume control over their membership.*

In 1990, the Prime Minister announced a new Native Agenda to address four main areas. These include resolving land claims and unfulfilled obligations, improving conditions on reserves, Indian/government relations and the contemporary concerns of aboriginal peoples.

Bud Glunz/NFB/National Archives of Canada/PA-145171

Preparing to hunt seal, Moose Factory Island, Ontario, 1946.

Indian and Northern Affairs Canada

Wild rice harvesting

Linguistic profiles vary by region, with some provinces experiencing more change than others. English is the mother tongue for the majority of Canadians, except in Quebec and the Northwest Territories. Since 1941, the proportion of Canadians citing English as their mother tongue has increased in all provinces except Quebec and Ontario. Conversely, the proportion citing French as their mother tongue has increased only in Quebec and British Columbia.

An "allophone" is a person whose mother tongue is neither English nor French — Canada's official languages. From 1941 to 1986, the proportion of allophones in the total population decreased from 14.4% to 12.8%.

Ontario had the largest allophone population in 1986, with almost 50% (1.5 million people) of the country's total. This was a sharp increase from 1941, when one-fourth of Canada's allophones (425,000) lived in the province. In the Prairie provinces, the proportion of allophones decreased substantially from 1941 to 1986. In 1941, 40% of Saskatchewan's population was

E.S. Curtis/National Archives of Canada/C-20848

A turn-of-the-century artist paints traditional Haida patterns on a hat of woven spruce root.

CANADIAN ABORIGINAL LANGUAGES GROUPED BY FAMILIES

Family	*Member languages*	*Estimated number of speakers*
Algonkian (or Algonquian)	*Abenaki, Blackfoot, Cree, Delaware, Malecite, Micmac, Montagnais-Naskapi, Ojibwa, Potawatomi*	*100,000*
Athapaskan	*Beaver, Carrier, Chilcotin, Chipewyan, Dogrib, Han, Hare, Kasha, Kutchin, Sarcee, Sekani, Slave, Tagish, Tahltan, Tuchone*	*17,000*
Eskimo-Aleut	*Inuktitut*	*16,000*
Siouan	*Dakota*	*5,000*
Wakashan	*Haisla, Heiltsuk, Kwakiutl, Nuuchah-nulth (also known as Nootka), Nitinat*	*3,400*
Salishan	*Bella Coola, Comox, Halkomelem, Lillooet, Okanagan, Sechelt, Shuswap, Squamish, Straits, Thompson*	*3,000*
Iroquoian	*Cayuga, Mohawk, Oneida, Onondaga, Seneca, Tuscarora*	*2,700*
Tsimshian	*Coast Tsimshian, Southern Tsimshian, Nass-Gitksan*	*2,300*
Haida	*Haida*	*150*
Tlingit	*Inland Tlingit*	*100*
Kutenain (or Kootenaian)	*Kutenai (or Kootenay)*	*30-40*

allophone; by 1986, this had dropped to 16%. In the same period, the province's share of the Canadian allophone total dropped from 20% to 5%. British Columbia had Canada's second highest allophone population in 1986 (471,000).

From 1941 to 1986, the number of people reporting an aboriginal language as their mother tongue in the Northwest Territories more than doubled; but this was overshadowed by the large increase in those citing English as their mother tongue. Consequently, the proportion of allophones dropped from 81.1% in 1941 to 42% in 1986.

In 1986, aboriginal languages were the main non-official languages in Newfoundland, Nova Scotia and New Brunswick. The main non-official language in Prince Edward Island was Dutch, in Quebec it was Greek, and in Ontario it was German. In Manitoba, Saskatchewan and Alberta, German and Ukrainian were most wide spread, while in British Columbia, Chinese was dominant.

With increased immigration from non-European countries has come greater linguistic diversity. In 1941, the only non-European languages in the top 15 non-official languages were Chinese and aboriginal languages. In 1986, these were joined by Punjabi, Tagalog, (spoken in the Philippines) Vietnamese and Arabic.

3.8 RELIGION

Historically, most Canadians have been either Protestant or Roman Catholic. In 1981, 11.4 million persons (47.3% of the total population) were Catholic and 9.9 million (41.2%) were Protestant.

The proportion of Canadians affiliated with the five main Protestant denominations in Canada (Anglican, Baptist, Lutheran, Presbyterian and United Church) dropped from 49.4% in 1941 to 34.9% in 1981. However, the share of the population affiliated with Protestant denominations other than the main groups increased from 2.9% in 1941 to 6.3% in 1981.

The proportion of the population with no religious affiliation increased from less than 1% in 1961 to 7.3% in 1981. This proportion is expected to exceed 10% by 1991.

Canada's religious mosaic is completed by Eastern Orthodox, Non-Christian religions, Judaism and several other smaller religious groups. In 1981, close to 1 million persons (4.2% of the total population) belonged to these groups.

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FOR FURTHER READING

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TABLES

LEGEND

.. *not available*
... *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*

e estimate
p preliminary
r revised

(Certain tables may not add due to rounding.)

3.1 TOTAL POPULATION GROWTH, CANADA, SELECTED YEARS, 1851-1990

Census year	Population No. ('000)	Increase during intercensal period		Average annual rate of population growth %
		No.	%	
1851	2,436.3		...	
1861	3,229.6	793,336	32.6	2.9
1871	3,689.3	459,624	14.2	1.3
1881	4,324.8	635,553	17.2	1.6
1891	4,833.2	508,429	11.8	1.1
1901	5,371.3	538,076	11.1	1.1
1911	7,206.6	1,835,328	34.2	3.0
1921	8,787.9	1,581,306	21.9	2.0
1931	10,376.8	1,588,837	18.1	1.7
1941	11,506.7	1,129,869	10.9	1.0
1951[1]	14,009.4	2,502,774	21.8	1.7
1956	16,080.8	2,071,362	14.8	2.8
1961	18,238.2	2,157,456	13.4	2.5
1966	20,014.9	1,776,633	9.7	1.9
1971	21,568.3	1,553,431	7.8	1.5
1976	22,992.6	1,424,293	6.6	1.3
1981	24,343.2	1,350,577	5.9	1.1
1986	25,354.1	1,010,883	4.2	0.8
1990[2]	26,602.6	...	..	...

[1] *Newfoundland included for the first time. Excluding Newfoundland, the increase would have been 2,141,358 or 18.6%.*
[2] *Updated postcensal estimates.*

3.2 TOTAL POPULATION, CANADA AND PROVINCES, SELECTED YEARS, 1921-90 (THOUSANDS)

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1921	—	88.6	523.8	387.9	2,360.5	2,933.7	610.1	757.5	588.5	524.6	4.1	8.1	8,787.4
1931	—	88.0	512.8	408.2	2,874.7	3,431.7	700.1	921.8	731.6	694.3	4.2	9.3	10,376.7
1941	—	95.0	578.0	457.4	3,331.9	3,787.7	729.7	896.0	796.2	817.8	5.0	12.0	11,506.7
1951	361.4	98.4	642.6	515.7	4,055.7	4,597.6	776.5	831.7	939.5	1,165.2	9.1	16.0	14,009.4
1956	415.1	99.3	694.7	554.6	4,628.4	5,404.9	850.0	880.7	1,123.1	1,398.5	12.2	19.3	16,080.8
1961	457.9	104.6	737.0	597.9	5,259.2	6,236.1	921.7	952.2	1,332.0	1,629.1	14.6	23.0	18,265.3
1966	493.4	108.5	756.0	616.8	5,780.8	6,960.9	963.1	955.4	1,463.2	1,873.7	14.4	28.7	20,014.9
1971	522.1	111.6	789.0	634.6	6,027.8	7,703.1	988.2	926.2	1,627.9	2,184.6	18.4	34.8	21,568.3
1976	557.7	118.2	828.6	677.3	6,234.5	8,264.5	1,021.5	921.3	1,838.0	2,466.6	21.8	42.6	22,992.6
1981	567.7	122.5	847.4	696.4	6,438.4	8,625.1	1,026.2	968.3	2,237.7	2,744.5	23.2	45.7	24,343.2
1986	568.3	126.6	873.2	710.4	6,540.3	9,113.5	1,071.2	1,010.2	2,375.3	2,889.2	23.5	52.2	25,354.1
1990[1]	573.4	130.3	894.2	723.2	6,769.0	9,743.3	1,091.6	999.5	2,471.6	3,126.6	26.1	53.8	26,602.6

[1] *Updated postcensal estimates.*

3.3 COMPONENTS OF POPULATION GROWTH, CANADA[1], 1851-1986

Period	Total population growth '000	Births '000	Deaths '000	Natural increase '000	Ratio of natural increase to total growth %	Immigration '000	Emigration[2] '000	Net migration '000	Ratio of net migration to total growth %	Population at the end of the Census period '000
1851-1861	793	1,281	670	611	77.0	352	170	182	23.0	3,230
1861-1871	460	1,370	760	610	132.6	260	410	−150	−32.6	3,689
1871-1881	636	1,480	790	690	108.5	350	404	−54	−8.5	4,325
1881-1891	508	1,524	870	654	128.7	680	826	−146	−28.7	4,833
1891-1901	538	1,548	880	668	124.2	250	380	−130	−24.2	5,371
1901-1911	1,835	1,925	900	1,025	55.9	1,550	740	810	44.1	7,207
1911-1921	1,581	2,340	1,070	1,270	80.3	1,400	1,089	311	19.7	8,788
1921-1931	1,589	2,420	1,060	1,360	85.5	1,200	970	230	14.5	10,377
1931-1941	1,130	2,294	1,072	1,222	108.1	149	241	−92	−8.1	11,507
1941-1951[3]	2,503	3,212	1,220	1,992	92.3	548	382	166	7.7	14,009
1951-1956	2,071	2,106	633	1,473	71.1	783	185	598	28.9	16,081
1956-1961	2,157	2,362	687	1,675	77.7	760	378	482	22.3	18,238
1961-1966	1,777	2,249	731	1,518	85.4	539	280	259	14.6	20,015
1966-1971	1,553	1,856	766	1,090	70.2	890	427	463	29.8	21,568
1971-1976	1,424	1,758	823	934	65.6	841	352	489	34.4	22,993
1976-1981	1,288	1,820	842	978	75.9	588	278	310	24.1	24,343
1981-1986	1,011	1,873	885	988	97.7	500	235	264	26.1	25,354

[1] *Includes Newfoundland since 1951*

[2] *Emigration figures are estimated by the residual method*

[3] *Data on growth components shown for 1941-51 were obtained by including data for Newfoundland for 1949-50 and 1950-51 only*

3.4 POPULATION OF CAPITAL CITIES, SELECTED CENSUS YEARS

City	1961	1971	1976	1981	1986
St. John's, Nfld.	63,633	88,102	86,576	83,770	96,216
Charlottetown, PEI	18,318	19,133	17,063	15,282	15,776
Halifax, NS	92,511	122,035	117,882	114,594	113,577
Fredericton, NB	19,683	24,254	45,248	43,723	44,352
Quebec, Que.	171,979	186,088	177,082	166,474	164,580
Toronto, Ont.	672,407	712,786	633,318	599,217	612,289
Winnipeg, Man.	265,429	246,246	560,874	564,473	594,551
Regina, Sask.	112,141	139,469	149,593	162,613	175,064
Edmonton, Alta.	281,027	438,152	461,361	532,246	573,982
Victoria, BC	54,941	61,761	62,551	64,379	66,303
Whitehorse, YT	5,031	11,217	13,311	14,814	15,199
Yellowknife, NWT	[1]	6,122	8,256	9,483	11,753
Ottawa, Ont.	268,206	302,341	304,462	295,163	300,763

[1] *Incorporated after June 1, 1961*

3.5 POPULATION OF CENSUS METROPOLITAN AREAS, SELECTED YEARS, JUNE 1, 1987-90[1] (THOUSANDS)

Census Metropolitan Area[2]	1986 Census[3]	1987[4]	1988[4]	1989[4]	1990[e]
Calgary	672.4[5]	675.7	689.0	703.8	723.3
Chicoutimi-Jonquière	158.5	159.9	162.3	158.0	158.0
Edmonton	785.8[5]	790.2	794.3	806.4	823.7
Halifax	296.0	300.0	301.7	306.3	312.0
Hamilton	557.0	566.8	570.8	583.0	594.6
Kitchener	311.2	317.0	324.8	334.0	346.0
London	342.3	347.5	350.3	359.7	368.2
Montreal	2,927.4[5]	2,949.0	2,984.2	3,021.3	3,068.1
Oshawa	203.5	210.4	220.1	234.6	244.8
Ottawa-Hull	819.2	832.8	844.6	853.2	863.9
Ontario part	619.0	630.8	640.8	645.8	651.9
Quebec part	200.2	202.1	203.9	207.3	212.0
Quebec	603.2	607.5	608.1	615.4	622.2
Regina	186.5	189.1	190.6	190.0	190.6
St. Catharines-Niagara	343.3	346.9	351.1	352.5	358.3
St. John's	161.9	162.2	162.2	163.3	163.9
Saint John	121.3	121.9	122.9	122.9	124.2
Saskatoon	200.6	203.4	204.9	204.3	205.0
Sherbrooke	130.0	131.8	131.8	133.7	134.3
Sudbury	148.9	147.4	148.7	149.7	149.2
Thunder Bay	122.2	123.1	123.3	123.1	123.6
Toronto	3,426.9	3,501.7	3,577.9	3,666.6	3,751.7
Trois-Rivières	128.9	130.4	130.3	130.8	131.6
Vancouver	1,380.6	1,412.4	1,456.8	1,506.0	1,547.0
Victoria	256.3[5]	261.2	266.4	272.5	278.7
Windsor	254.0	256.6	262.3	258.1	260.7
Winnipeg	625.3	632.1	638.8	640.4	647.1

[1] *Estimates obtained by aggregating the census division regression-nested estimates.*

[2] *Based on geographical boundaries as delineated by the 1986 Census.*

[3] *The June 3, 1986 Census figures are adjusted to refer to June 1, 1986.*

[4] *These estimates are presented here for comparison purposes only with respect to the estimation method used (regression method). More recent data generated by the component method are available from Catalogue No. 91-212.*

[5] *Includes estimated population on incompletely enumerated Indian Reserves and Settlements.*

3.6 LAND AREA AND POPULATION DENSITY, CENSUS YEARS

Province or territory	Land area km^2	Population per km^2				
		1961	1971	1976	1981	1986
Newfoundland	371,635	1.24	1.41	1.51	1.5	1.5
Prince Edward Island	5,660	18.50	19.73	20.90	21.6	22.4
Nova Scotia	52,841	13.95	14.93	15.87	16.0	16.5
New Brunswick	71,569	8.29	8.80	9.39	9.7	9.9
Quebec	1,357,655	3.88	4.44	4.59	4.7	4.8
Ontario	916,734	7.00	8.64	9.27	9.4	9.9
Manitoba	547,704	1.68	1.80	1.86	1.9	2.0
Saskatchewan	570,113	1.62	1.63	1.62	1.7	1.8
Alberta	638,233	2.07	2.53	2.85	3.5	3.7
British Columbia	892,677	1.75	2.35	2.65	3.1	3.2
Yukon	531,844	0.03	0.03	0.04	0.4	0.4
Northwest Territories	3,246,389	0.01	0.01	0.01	0.1	0.1
Canada	9,203,054[1]	1.98	2.34	2.49	2.6	2.8

[1] *This figure differs from Table 1.1 because land area is taken from Census maps.*

3.7 POPULATION BY AGE GROUP AND SEX, BY PROVINCE, 1990[1] (THOUSANDS)

Province or territory	0-4 years		5-9 years		10-14 years		15-19 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	19.9	19.1	22.7	22.2	25.8	24.2	26.2	26.2
Prince Edward Island	5.0	4.9	5.0	4.8	5.2	4.9	5.1	4.8
Nova Scotia	31.2	30.0	30.9	29.9	31.9	30.4	36.3	33.0
New Brunswick	24.9	23.6	26.0	24.9	27.9	26.5	29.5	28.6
Quebec	223.6	213.3	231.4	219.3	243.6	230.0	251.7	217.7
Ontario	356.0	339.1	336.4	320.1	324.8	309.4	376.6	328.4
Manitoba	43.2	41.2	40.8	38.6	39.4	37.8	42.2	39.1
Saskatchewan	42.4	40.4	41.3	39.7	39.9	38.0	36.3	35.8
Alberta	107.2	102.8	100.9	95.4	91.7	86.7	97.9	88.2
British Columbia	110.8	105.5	110.2	104.8	104.6	99.2	111.1	100.9
Yukon	1.2	1.2	1.2	1.1	1.0	0.9	1.0	1.0
Northwest Territories	3.6	3.5	2.9	2.8	2.5	2.4	2.7	2.4
Canada	968.9	924.4	949.7	903.4	938.3	890.5	1,016.5	906.2

Province or territory	20-24 years		25-34 years		35-44 years		45-54 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	26.2	25.7	46.5	48.2	44.0	44.4	27.6	26.8
Prince Edward Island	5.1	5.0	10.9	10.9	9.4	9.6	6.4	6.2
Nova Scotia	36.3	34.5	78.6	79.2	67.3	68.6	45.6	45.8
New Brunswick	29.5	28.1	61.8	62.2	55.9	56.6	36.2	35.7
Quebec	251.7	242.7	617.8	619.4	543.4	552.4	379.4	387.5
Ontario	376.6	363.9	872.7	880.2	747.6	768.0	522.7	524.7
Manitoba	42.2	40.2	94.8	93.3	78.3	79.2	52.4	52.7
Saskatchewan	36.3	34.7	83.0	82.2	68.7	66.7	45.6	45.5
Alberta	97.9	95.0	239.7	237.0	199.2	192.8	121.7	117.1
British Columbia	111.1	108.3	261.3	268.6	251.7	252.2	170.9	166.8
Yukon	1.0	1.0	2.9	2.7	2.5	2.4	1.5	1.2
Northwest Territories	2.7	2.5	5.3	5.3	4.2	3.6	2.0	1.8
Canada	1,016.5	981.6	2,375.2	2,389.5	2,072.3	2,096.2	1,412.0	1,411.8

Province or territory	55-64 years		65-69 years		70 + years		All ages	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	21.1	20.9	8.6	8.9	15.8	20.7	286.1	287.4
Prince Edward Island	5.2	5.2	2.3	2.6	4.8	7.0	64.3	66.0
Nova Scotia	36.0	38.9	16.0	19.0	30.5	45.7	439.2	454.9
New Brunswick	28.3	30.5	12.8	15.0	23.6	34.6	357.0	366.2
Quebec	298.9	328.2	116.8	144.4	181.0	297.4	3,316.5	3,452.5
Ontario	437.7	456.4	180.4	217.1	287.9	446.6	4,789.2	4,954.0
Manitoba	45.1	47.6	20.5	25.0	40.0	59.3	537.9	553.7
Saskatchewan	42.3	43.0	19.4	21.5	41.0	54.9	497.2	502.3
Alberta	93.7	92.1	34.8	39.7	60.6	85.2	1,239.5	1,232.0
British Columbia	144.0	142.9	63.0	73.1	112.1	158.7	1,545.4	1,581.2
Yukon	0.9	0.7	0.2	0.2	0.3	0.2	13.6	12.5
Northwest Territories	1.3	1.1	0.4	0.3	0.4	0.5	27.9	25.9
Canada	1,154.3	1,207.6	475.3	566.8	797.9	1,210.9	13,114.0	13,488.6

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[1] *Updated postcensal estimates.*

3.8 SUMMARY OF PRINCIPAL VITAL STATISTICS, 1989

Province or territory	Number				
	Live births	Deaths	Natural increase	Marriages	Divorces
Newfoundland	7,026	3,718	3,308	3,905	981
Prince Edward Island	1,937	1,089	848	1,019	243
Nova Scotia	12,533	7,516	5,017	6,828	2,524
New Brunswick	9,667	5,496	4,171	5,254	1,647
Quebec	92,373	48,305	44,068	33,325	19,790
Ontario	145,338	70,907	74,431	80,377	31,202
Manitoba	17,321	8,819	8,502	7,800	2,847
Saskatchewan	16,651	7,920	8,731	6,637	2,451
Alberta	43,351	13,854	29,497	19,888	8,227
British Columbia	43,769	22,997	20,772	25,170	10,630
Yukon	480	95	385	214	82
Northwest Territories	1,479	249	1,230	223	92
Canada	391,925	190,965	200,960	190,640	80,716

3.9 AGE-SPECIFIC FERTILITY RATE AND REPRODUCTION RATE, SELECTED CENSUS YEARS, 1921-86[1,2]

Year	Fertility rates per 1,000 women, by age group							Total fertility rate	Gross repro-duction rate	General fertility rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49			
1921[3]	38.0	165.4	186.0	154.6	110.0	46.7	6.6	3,536	1.712	107.9
1926	29.0	139.9	177.4	153.8	114.6	50.7	6.0	3,357	1.628	98.8
1931	29.9	137.1	175.1	145.3	103.1	44.0	5.5	3,200	1.555	93.6
1936	25.7	112.1	144.3	126.5	90.0	36.3	4.4	2,696	1.310	79.8
1941	30.7	138.4	159.8	122.3	80.0	31.6	3.7	2,832	1.377	86.6
1946	36.5	169.6	191.4	146.0	93.1	34.5	3.8	3,374	1.640	105.0
1951	48.1	188.7	198.8	144.5	86.5	30.9	3.1	3,503	1.701	109.2
1956	55.9	222.2	220.1	150.3	89.6	30.8	2.9	3,858	1.874	116.6
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3,840	1.868	111.5
1966	48.2	169.1	163.5	103.3	57.5	19.1	1.7	2,812	1.369	81.5
1971	40.1	134.4	142.0	77.3	33.6	9.4	0.6	2,187	1.060	67.7
1976	33.4	110.3	129.9	65.6	21.1	4.3	0.3	1,825	0.887	60.3
1981	26.4	96.7	126.9	68.0	19.4	3.2	0.2	1,705	0.829	56.7
1986	23.5	84.8	124.6	75.6	22.6	3.2	0.1	1,672	0.816	50.6

[1] *Excludes Newfoundland.*
[2] *Yukon and Northwest Territories excluded from 1921 to 1946.*
[3] *Excludes Quebec*

3.10 MARRIAGES, FIRST MARRIAGES AND REMARRIAGES, 1967-88

Year	Number of marriages	Number of first marriages		Marriages in which at least one of the spouses had been previously married	
		Males	Females	No.	%
1967	165,879	151,883	151,488	20,417	12.3
1968	171,766	157,309	156,783	21,133	12.3
1969	182,183	162,853	162,690	27,494	15.1
1970	188,428	167,267	167,421	29,975	15.9
1971	191,324	168,944	169,072	31,698	16.6
1972	200,470	176,537	177,155	33,582	16.8
1973	199,064	173,355	174,135	36,047	18.1
1974	198,824	170,678	172,107	39,063	19.6
1975	197,585	167,022	168,817	42,300	21.4
1976	193,343	155,679	157,412	43,098	22.3
1977	187,344	154,906	156,854	44,750	23.9
1978	185,523	151,884	154,016	46,254	24.9
1979	187,811	152,731	154,982	48,309	25.7
1980	191,069	154,138	156,918	50,660	26.5
1981	190,082	151,978	154,506	52,340	27.5
1982	188,360	149,419	152,825	52,773	28.0
1983	184,675	144,960	147,968	54,342	29.4
1984	185,597	144,674	147,907	55,436	29.9
1985	185,096	144,009	146,718	54,632	29.7
1986	175,518	137,665	138,523	52,678	30.0
1987	182,151	138,443	139,312	60,018	32.9
1988	187,728	142,956	143,993	61,665	32.8

3.11 DIVORCES AND RATES, 1985-89

Province or territory	Number					Rate per 100,000 population				
	1985	1986	1987	1988	1989	1985	1986	1987	1988	1989
Newfoundland	561	610	1,002	884	981	96.6	107.3	176.3	155.6	171.8
Prince Edward Island	213	191	246	260	243	167.6	150.9	193.2	202.0	186.9
Nova Scotia	2,337	2,550	2,640	2,478	2,524	265.4	292.0	300.4	280.3	284.9
New Brunswick	1,360	1,700	1,952	1,665	1,647	189.1	239.6	274.0	233.1	229.2
Quebec	15,814	18,399	19,315	19,825	19,790	240.3	281.7	293.0	298.6	295.7
Ontario[1]	20,854	28,653	38,223	29,873	31,202	230.0	314.8	412.3	316.8	325.7
Manitoba	2,314	2,917	3,771	2,998	2,847	216.3	274.4	349.5	276.4	262.4
Saskatchewan	1,927	2,395	2,751	2,463	2,451	189.0	237.2	271.3	243.6	243.3
Alberta	8,102	9,386	9,170	8,644	8,227	344.9	396.7	385.2	360.0	339.5
British Columbia	8,330	11,176	11,697	10,591	10,630	288.0	387.6	399.8	354.9	348.1
Yukon and Northwest Territories	168	183	218	191	174	228.0	241.7	286.5	247.7	221.4
Canada	61,980	78,160	90,985	79,872	80,716	244.4	308.8	355.1	308.1	307.8

[1] *Data have been adjusted to take account of approximately 2,000 cases granted in Ontario in 1986 and 4,000 in Ontario in each of 1987 and 1988 that are not on the data base due to incomplete information.*

3.12 FAMILIES, PERSONS IN FAMILIES AND FAMILY STRUCTURE, CENSUS YEARS, 1951-86

Family structure	1951	1956	1961	1966	1971	1976	1981	1986
Total families ('000)	3,287.4	3,711.5	4,147.4	4,526.7	5,053.2	5,727.9	6,325.0	6,734.9
Persons in families ('000)	12,216.1	14,077.2	16,095.7	17,681.7	18,791.9	19,783.2	20,602.6	21,914.7
Average number of persons per family	3.7	3.8	3.9	3.9	3.7	3.5	3.3	3.1
Non-family persons ('000)	1,793.3	1,889.8	2,001.6	2,187.8	2,217.2	2,628.8	3,194.8	3,578.5
Total husband-wife families[1] ('000)			3,800.0	4,154.4	4,575.6	5,168.6	5,611.0	5,881.3
Total lone-parent families ('000)			347.4	371.9	477.5	559.3	714.0	853.6

[1] *The total for husband-wife families comprises now-married and common-law couples. Information on common-law couples is not available prior to the 1981 Census.*

3.13 POPULATION BY MOTHER TONGUE, 1931-86

Year	English		French		Other	
	No.	%	No.	%	No.	%
1931	5,914,402	57.0	2,832,298	27.3	1,630,086	15.7
1941[1]	6,488,190	56.4	3,354,753	29.2	1,663,712	14.4
1951[1]	7,923,481	58.1	4,066,529	29.8	1,658,003	12.1
1951	8,280,809	59.1	4,068,850	29.0	1,659,770	11.8
1961	10,660,534	58.5	5,123,151	28.1	2,454,562	13.4
1971	12,973,810	60.2	5,793,650	26.9	2,800,850	12.9
1981	14,918,460	61.3	6,249,095	26.7	3,175,625	13.0
1986[2]	15,709,650	62.1	6,354,840	25.1	3,244,850	12.8

[1] *Excludes Newfoundland.*
[2] *For the first time in the 1986 Census, Canadians could report more than one mother tongue. To facilitate comparisons, the data shown in this table have been adjusted by distributing the multiple responses in 1986 among the various groups in the same porportions as in the 1981 Census.*

3.14 POPULATION BY MOTHER TONGUE, 1941 AND 1986 CENSUSES[1] (BASED ON 100% DATA)

Year and province or territory	English		French		Other	
	No.	%	No.	%	No.	%
1941						
Prince Edward Island	83,242	87.6	10,678	11.2	1,127	1.2
Nova Scotia	514,043	88.9	41,350	7.2	22,569	3.9
New Brunswick	293,339	64.1	157,862	34.5	6,200	1.4
Quebec	468,996	14.1	2,717,287	81.6	145,599	4.4
Ontario	3,073,320	81.1	289,146	7.6	425,189	11.2
Manitoba	408,544	56.0	51,546	7.1	269,654	37.0
Saskatchewan	499,925	55.8	43,728	4.9	352,339	39.3
Alberta	500,926	62.9	31,451	4.0	263,792	33.1
British Columbia	641,419	78.4	11,058	1.4	165,384	20.2
Yukon	2,598	52.9	213	4.3	2,103	42.8
Northwest Territories	1,838	15.3	434	3.6	9,756	81.1
Canada[2]	6,488,190	56.4	3,354,753	29.2	1,663,712	14.5

3.14 POPULATION BY MOTHER TONGUE, 1941 AND 1986 CENSUSES[1] (BASED ON 100% DATA) (concluded)

Year and province or territory	English No.	English %	French No.	French %	Other No	Other %
1986						
Newfoundland	561,300	98.8	2,670	0.5	4,375	0 8
Prince Edward Island	119,175	94.1	5,920	4.7	1,555	1.2
Nova Scotia	818,905	93.8	35,810	4.1	18,450	2.1
New Brunswick	462,935	65.3	237,570	33.5	8,940	1 3
Quebec	678,785	10.4	5,408,980	82.8	444,695	6.8
Ontario	7,097,920	78.0	484,265	5.3	1,519,505	16.7
Manitoba	780,015	73.4	51,775	4.9	231,220	21.8
Saskatchewan	827,250	81.9	23,720	2.3	158,655	15.7
Alberta	1,946,725	82.3	56,245	2.4	362,860	15.3
British Columbia	2,366,805	82.1	45,845	1.6	470,725	16.3
Yukon	20,930	89.1	620	2.6	1,950	8.3
Northwest Territories	28,905	55.3	1,420	2.7	21,920	42.0
Canada	15,709,650	62.1	6,354,840	25.1	3,244,850	12.8

[1] *Data are based on adjusted data*
[2] *Excludes Newfoundland*

3.15 POPULATION BY OFFICIAL LANGUAGE, CENSUS YEARS, 1931-86

Census year	English only No.	English only %	French only No.	French only %	Both English and French No.	Both English and French %	Neither English nor French No.	Neither English nor French %	Total No.
1931	6,999,913	67.5	1,779,338	17.1	1,322,370	12.7	275,165	2.7	10,376,786
1941	7,735,486	67.2	2,181,746	19.0	1,474,009	12.8	115,414	1.0	11,506,655
1951[1]	9,031,018	66.2	2,741,659	20.1	1,723,457	12.6	151,879	1.1	13,648,013
1951[2]	9,387,395	67.0	2,741,812	19.6	1,727,447	12.3	152,775	1.1	14,009,429
1961	12,284,762	67.4	3,489,866	19.1	2,231,172	12.2	232,447	1.3	18,238,247
1971	14,469,540	67.1	3,879,255	18.0	2,900,155	13.4	319,360	1.5	21,568,315
1981	16,122,900	66.9	3,987,245	16.6	3,681,960	15.3	291,395	1.2	24,083,495
1986	16,716,905	66.8	3,957,730	15.8	4,056,160	16.2	291,215	1.2	25,022,005

[1] *Excluding Newfoundland*
[2] *Including Newfoundland*

3.16 POPULATION BY AGE AND SEX FOR DETAILED ORIGINS, 1986 CENSUS[1] (BASED ON 20% SAMPLE DATA)

Age and sex	North American Indian only	Métis only	Inuit only	North American Indian and non-aboriginal origins	Métis and non-aboriginal origins	Inuit and non-aboriginal origins	Other multiple aboriginal origins[2]	Total aboriginal origins	Total population
Less than 15 years	101,375	19,770	10,790	89,115	26,460	2,510	9,745	259,770	5,387,905
Male	51,495	10,185	5,580	45,420	13,445	1,220	4,780	132,130	2,762,200
Female	49,875	9,580	5,210	43,690	13,010	1,295	4,975	127,640	2,625,705
15-24 years	61,605	13,385	6,420	48,725	14,520	1,485	4,830	150,970	4,161,195
Male	30,315	6,705	3,250	22,955	6,960	720	2,500	73,405	2,104,400
Female	31,290	6,680	3,170	25,770	7,565	760	2,335	77,560	2,056,795
25-39 years	66,160	13,570	5,335	67,785	16,980	1,315	6,155	177,295	6,520,935
Male	31,180	6,610	2,660	31,460	7,685	700	3,100	83,395	3,235,875
Female	34,975	6,960	2,680	36,330	9,295	615	3,055	93,905	3,285,055
40-54 years	32,940	7,510	2,960	23,735	6,910	580	2,285	76,930	4,144,710
Male	15,980	3,695	1,440	11,855	3,350	320	1,260	37,905	2,078,385
Female	16,955	3,820	1,515	11,885	3,565	255	1,025	39,020	2,066,325

3.16 POPULATION BY AGE AND SEX FOR DETAILED ORIGINS, 1986 CENSUS[1] (BASED ON 20% SAMPLE DATA) (concluded)

Age and sex	North American Indian only	Métis only	Inuit only	North American Indian and non-aboriginal origins	Métis and non-aboriginal origins	Inuit and non-aboriginal origins	Other multiple aboriginal origins[2]	Total aboriginal origins	Total population
55-64 years	12,710	3,095	1,055	6,305	2,295	150	545	26,160	2,312,105
Male	5,955	1,550	555	3,095	1,070	70	275	12,570	1,115,525
Female	6,755	1,550	505	3,210	1,225	80	270	13,595	1,196,585
65 years and more	11,445	2,420	730	3,730	1,730	130	415	20,595	2,495,160
Male	5,615	1,135	355	1,680	800	65	205	9,860	1,072,070
Female	5,830	1,285	370	2,045	930	70	210	10,740	1,423,085
Total	286,225	59,745	27,290	239,400	68,895	6,175	23,995	711,720	25,022,005
Male	140,550	29,875	13,840	116,465	33,310	3,095	12,125	349,265	12,368,455
Female	145,680	29,865	13,450	122,930	35,585	3,075	11,870	362,460	12,653,550

[1] *All figures exclude the population estimated at about 45,000 on 136 incompletely enumerated Indian reserves and settlements.*

[2] *Refer to those persons reporting two or more aboriginal origins with or without a non-aboriginal origin.*

3.17 PRINCIPAL RELIGIOUS DENOMINATIONS OF THE POPULATION, SELECTED YEARS, 1871-1981

Religion	Percentage distribution											
	1871	1881	1891	1901	1911	1921	1931	1941	1951	1961	1971	1981[1]
Catholic	42.9	41.9	41.6	41.7	39.4	38.7	41.3	43.4	44.7	46.7	47.3	47.3
Roman Catholic	42.9	41.9	41.6	41.7	39.4	38.7	39.5	41.8	43.3	45.7	46.2	46.5
Ukrainian Catholic	—	—	—	—	—	—	1.8	1.6	1.4	1.0	1.1	0.8
Protestant	55.4	56.0	56.5	55.6	55.9	56.0	54.4	52.2	50.9	48.9	44.4	41.2
United Church	—	—	—	—	—	0.1	19.5[2]	19.2	20.5	20.1	17.5	15.6
Anglican	14.1	13.6	13.7	12.8	14.5	16.1	15.8	15.2	14.7	13.2	11.8	10.1
Presbyterian	16.2	15.8	15.9	15.8	15.6	16.1	8.4[2]	7.2	5.6	4.5	4.0	3.4
Lutheran	1.1	1.1	1.4	1.8	3.2	3.3	3.8	3.5	3.2	3.6	3.3	2.9
Baptist	6.8	6.9	6.4	5.9	5.3	4.8	4.3	4.2	3.7	3.3	3.1	2.9
Pentecostal	—	—	—	—	—	0.1	0.3	0.5	0.7	0.8	1.0	1.4
Other Protestant[3]	17.2	18.6	19.1	19.3	17.3	15.5	2.3[2]	2.4	2.5	3.4	3.7	4.9
Eastern Orthodox	—	—	—	0.3	1.2	1.9	1.0	1.2	1.2	1.3	1.5	1.5
Jewish	—	0.1	0.1	0.3	1.0	1.4	1.5	1.5	1.5	1.4	1.3	1.2
No religion	0.1	0.1	[4]	0.1	0.4	0.2	0.2	0.2	0.4	0.5	4.3[5]	7.3
Other[6]	1.6	1.9	1.8	1.9	2.0	1.9	1.6	1.5	1.4	1.2	1.2	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] *Excludes inmates of institutions (numbering 260,000 in 1981).*

[2] *Between 1911 and 1931, the United Church denomination was formed through an amalgamation of the Methodists, Congregationalists and about one-half of the Presbyterian group. For 1931 and thereafter, the figures for Presbyterian reflect the segment that did not amalgamate with the United Church.*

[3] *Other Protestant denominations include Methodists and Congregationalists up to 1921, and other denominations such as Adventist, Churches of Christ, Disciples and the Salvation Army. The "Other" group also includes a certain proportion of smaller Protestant denominations.*

[4] *Included in "Other".*

[5] *In 1971, the introduction of self-enumeration methodology may have been in part a cause of the large increase in the proportion of the population reporting "No religion". However, the 1971 and 1981 figures for this group are comparable.*

[6] *In 1981, many of these smaller denominations were disaggregated and are counted in the "Other Protestant" category. The remainder of the "Other" group includes Eastern Non-Christian religions such as Islam, Hindu, Sikh and Buddhist, as well as Para-religious groups such as New Thought and Fourth Way.*

3.18 IMMIGRANT ARRIVALS, 1961-89

Year	Arrivals	Year	Arrivals
1961	71,689	1976	149,429
1962	74,586	1977	114,914
1963	93,151	1978	86,313
1964	112,606	1979	112,096
1965	146,758	1980	143,117
1966	194,743	1981	128,618
1967	222,876	1982	121,147
1968	183,974	1983	89,157
1969	161,531	1984	88,239
1970	147,713	1985	84,302
1971	121,900	1986	99,219
1972	122,006	1987	152,098
1973	184,200	1988	161,929
1974	218,465	1989	191,886
1975	187,881		

3.19 IMMIGRANT ARRIVALS, BY COUNTRY OF LAST PERMANENT RESIDENCE

Country of last permanent residence	1986	1987	1988	1989
Europe				
Austria	201	294	218	259
Belgium	234	382	440	385
British Isles				
England	4,193	7,028	7,600	6,836
Northern Ireland	186	357	302	363
Scotland	567	948	1,071	968
Wales	139	191	187	237
Channel Islands	3	23	12	13
Sub-total, British Isles	5,088	8,547	9,172	8,417
Czechoslovakia	835	922	866	1,086
Denmark	91	115	147	140
Finland	68	96	79	78
France	1,610	2,290	2,589	2,882
Germany, Democratic Republic of	33	21	42	51
Germany, Federal Republic of	1,403	1,906	1,696	2,025
Greece	551	771	579	770
Hungary	697	717	1,201	1,003
Ireland	434	990	1,272	1,339
Italy	715	1,031	860	1,036
Malta	75	79	106	74
Netherlands	524	575	821	824
Norway	53	80	79	94
Poland	5,231	7,036	9,231	15,979
Portugal (incl. Azores and Madeira)	2,435	7,300	6,467	8,185
Spain	119	216	213	262
Sweden	189	214	193	208
Switzerland	361	633	597	664
Turkey	248	389	338	510
USSR	107	225	620	1,599
Yugoslavia	481	1,059	1,346	2,028
Other Europe	926	1,675	11,347	10,951
Total, Europe	22,709	37,563	40,689	52,087

3.19 IMMIGRANT ARRIVALS, BY COUNTRY OF LAST PERMANENT RESIDENCE (continued)

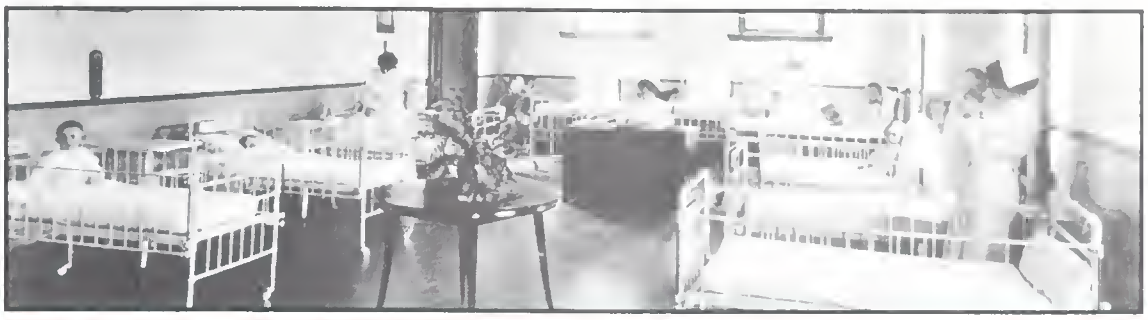
Country of last permanent residence	1986	1987	1988	1989
Africa				
Angola	42	68	47	34
Egypt	507	1,066	1,071	1,552
Ghana	234	956	387	428
Kenya	356	773	1,325	1,566
Morocco	—	—	735	1,090
Mozambique	36	31	17	19
Nigeria	152	253	241	304
South Africa	938	1,845	1,672	1,557
Tanzania	342	468	460	605
Uganda	81	125	150	143
Zambia	39	57	179	365
Other Africa	2,043	2,859	3,096	4,523
Total, Africa	4,770	8,501	9,380	12,186
Australasia				
Australia	338	530	518	626
New Zealand	163	205	212	264
Papua New Guinea	2	16	15	4
Other Australasia	—	2	—	—
Total, Australasia	503	753	745	894
Asia				
Bangladesh	449	473	454	237
China	1,902	2,625	2,778	4,426
Cyprus	66	79	106	112
Hong Kong	5,893	16,170	23,281	19,904
India	6,940	9,692	10,409	8,817
Indonesia	142	219	261	278
Iran	1,952	3,083	3,669	3,795
Iraq	242	296	532	891
Israel	1,206	1,461	1,435	1,735
Japan	273	446	346	541
Jordan	102	197	146	2,421
Kampuchea	1,745	1,612	1,543	2,041
Korea, Republic of	1,143	2,276	2,676	2,813
Laos	636	456	842	679
Lebanon	2,348	3,414	3,143	6,172
Malaysia	418	717	1,676	1,934
Pakistan	643	991	1,242	2,007
Philippines	4,102	7,343	8,310	11,385
Singapore	220	489	1,141	1,634
Sri Lanka	1,753	4,226	2,409	2,419
Syria	387	677	585	1,110
Taiwan	695	1,467	2,187	3,386
Thailand	86	118	154	194
Vietnam	6,622	5,668	6,196	9,403
Other Asia	1,635	3,142	5,615	7,153
Total, Asia	41,600	67,337	81,136	95,487
North and Central America				
Antigua	56	66	39	65
Bahamas	28	24	30	47
Barbados	259	325	314	310
Bermuda	37	73	31	26
Grenada	239	304	170	168
Haiti	1,727	2,121	1,815	2,363
Jamaica	4,652	5,422	3,923	3,895
Mexico	591	815	925	1,012
St. Kitts, Nevis and Anguilla	49	51	46	45
St. Vincent	207	223	129	119
Trinidad and Tobago	940	1,721	2,231	3,070
United States	7,275	7,967	6,537	6,924
Other North and Central America	6,167	6,955	5,457	5,649
Total, North and Central America	22,227	26,067	21,647	23,693

3.19 IMMIGRANT ARRIVALS, BY COUNTRY OF LAST PERMANENT RESIDENCE (concluded)

Country of last permanent residence	1986	1987	1988	1989
South America				
Argentina	243	567	433	601
Bolivia	78	156	59	63
Brazil	241	265	433	703
Chile	639	1,422	954	1,006
Colombia	256	374	368	455
Ecuador	249	363	265	278
French Guiana	3	3	1	3
Guyana	3,905	6,073	2,875	3,165
Paraguay	70	113	131	1,140
Peru	624	861	1,276	763
Suriname	13	59	27	25
Uruguay	137	273	100	144
Venezuela	228	272	333	337
Total, South America	6,686	10,801	7,255	8,683
Oceania				
Fiji	359	512	561	744
Mauritius	312	521	478	357
Other Oceania	53	41	38	46
Total, Oceania	724	1,074	1,077	1,147
Not stated	—	2	—	—
Total, all countries	99,219	152,098	161,929	191,886

Sources

Employment and Immigration Canada.
Statistics Canada.



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Chapter 4

HEALTH

4.1 INTRODUCTION

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CANADA'S HEALTH CARE SYSTEM supports the general well-being of all Canadians, and helps those with chronic health problems to help themselves.

As a consequence, the health of Canadians has improved dramatically over the past century. Mortality rates have declined, many infectious diseases have been eliminated, and medical technology has steadily improved. At the same time, health care has broadened to address mental and social problems, not just physical illnesses and injuries.

In recent surveys, most adult Canadians indicated they considered themselves to be in good or excellent health. Indeed, Canadians enjoy a quality of life equal to or better than that of most other countries.

Despite the progress of the last century, Canada still faces important health problems. The number of reported cases of AIDS is increasing rapidly. Low-income groups have lower life expectancy than other Canadians, as well as higher rates of disability, illness and mental health disorders. A substantial number of Canadians suffer from chronic disease, disability, or emotional stress and lack the community support to cope with these problems.

In the late 1980s, the leading causes of death in Canada were cardiovascular disease, cancer and accidents. Hospitalization occurred most commonly as a result of heart disease, stroke, cancer, accidents, respiratory disease, and mental disorders. Preventive measures could reduce the incidence of lung cancer and heart disease by up to half; and finding new and more effective ways of preventing illness and injury is an important health priority.

Over the past decade, changing morbidity and mortality patterns coupled with new attitudes have led to increasing emphasis on health promotion and disease prevention. Canadians are taking responsibility for their health, for the safety of their home and work environments, and for their health care choices. Consequently, Canada's health care system now embraces public, voluntary, professional and consumer health organizations concerned with all facets of a person's well-being.

Strategies to reduce incidence of health problems such as drug and alcohol abuse, AIDS and cardiovascular disease have also changed, and now combine advertising campaigns, research, demonstration projects, education, and consultation.

One of the cornerstones of effective health care planning is comprehensive, reliable data on the health status and attitudes of a population. In 1985, Health and Welfare Canada conducted Canada's first National Health Promotion Survey. Focusing on how Canadians view their health, the survey covered topics ranging from drug and alcohol use to preventive practices and social support. The survey added to information collected by earlier surveys, and led to the 1986 report, *Achieving Health for All: A Framework for Health Promotion*. This report outlined major health care goals, and identified specific issues such as alcohol, tobacco and drug abuse, and mental health.

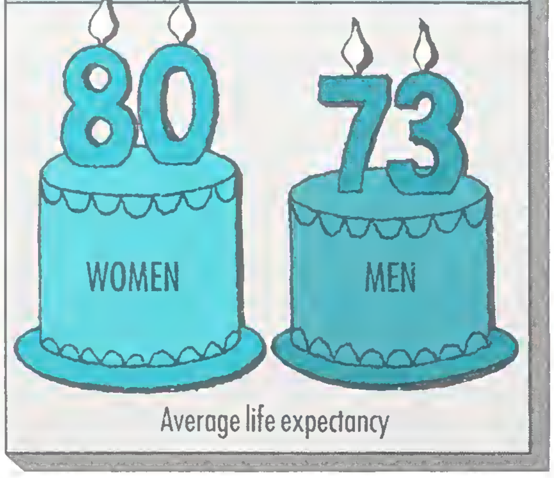
As *Health for All* pointed out, one way to reduce illness is to change lifestyles. Over the last few decades, many Canadians have improved their diets, stopped smoking and begun to exercise regularly. In 1981, the Canada Fitness Survey found that 56% of Canadians aged 10 and over were physically active; however, less than half of this group were sufficiently active to benefit their cardiovascular health.

The federal government helps increase awareness of the benefits of fitness through Fitness and Amateur Sport Canada (FAS). This agency has programs for disabled persons, young people, employees and older adults. As well as co-ordinating Canada Fitweek and the PARTICIPaction program, FAS conducts research and develops guidelines for training fitness leaders and management volunteers.

4.2 CANADA'S HEALTH

LIFE EXPECTANCY

Women live longer than men



Canada's life expectancy is among the highest in the world. Females born between 1985 and 1987 can expect to live for almost 80 years, while males can expect to live for 73 years. Since 1920-22, this is an increase of 19 years for females and 14 years for males.

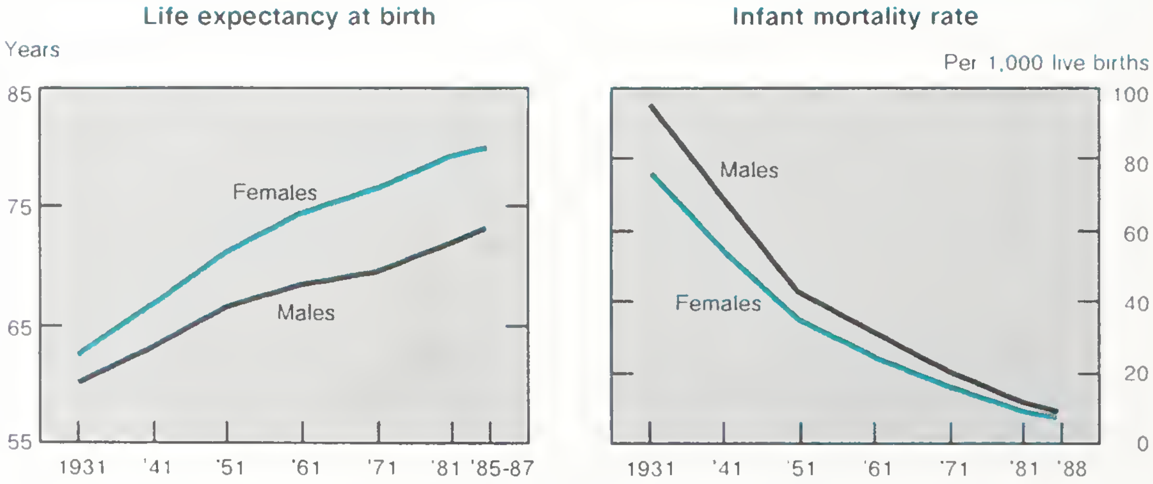
Women have made much greater gains in life expectancy than men. In 1920-22, women had an advantage in life expectancy over men of less than two years; by 1985-87, this had more than tripled, although the male/female gap has narrowed slightly over the past decade.

High life expectancy in industrialized countries has come largely from success in combating infectious diseases during the first year of life. Better health care before and after birth, coupled with better nutrition and living standards, led to an 82% drop in the infant mortality rate (deaths under age one as a percentage of all births) from 1951 to 1988.

One consequence of increased life expectancy is that a greater proportion of Canada's population can expect to live to older ages. In 1920-22, fewer than 6 out of 10 Canadians could expect to survive to their 65th birthday; by 1985-87, this had risen to 8 out of 10. At the oldest ages, the increases in survival are even more striking. In 1920-22, just over 1 in 10 Canadians could expect to reach their 85th birthday; by 1985-87, this had increased to more than 3 out of 10.

Chart 4.1

TRENDS IN LIFE EXPECTANCY AND INFANT MORTALITY



CAUSES OF DEATH

Life expectancy has increased throughout this century largely because the majority of Canadians now die of degenerative diseases that occur primarily at older ages. In 1926, for example, cardiovascular disease and cancer accounted for about 25% of deaths; by 1988, they had become the leading causes, accounting for 68% of all deaths. At the same time, incidence of infectious diseases has declined; for example, tuberculosis accounted for 7% of deaths in 1926, falling to less than 1% by 1988.

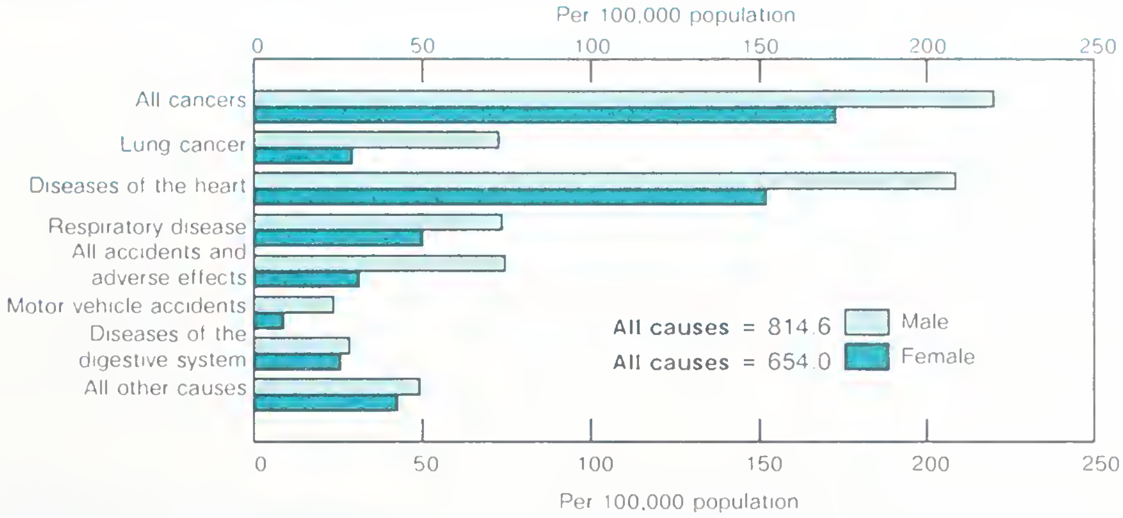
Violent acts (such as assaults) and accidents (including suicides) were the third leading cause of death in 1988, and the leading cause among men younger than 45 and women younger than 35. However, men in their twenties and thirties were four times as likely to die of these causes as were women in the same age group.

From 1978 to 1988, the only leading cause with increased incidence was cancer, rising 6%. This cancer rate increased steadily over the decade largely due to a doubling of female deaths from lung cancer.

In the 45-69 age range, cancer caused the most deaths among females, while cardiovascular disease caused the most male deaths. After age 65, cardiovascular disease was the leading cause for both men and women, followed by cancer.

Chart 4.2

STANDARDIZED DEATH RATES, BY SELECTED CAUSE AND SEX, 1988



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Men wearing masks during Spanish Flu, 1918.

The age-adjusted death rate, which eliminates the effects of changes in the age structure of the population, declined slightly more for males than for females from 1978 to 1988. This is reflected in the slight convergence of male and female life expectancy. The greatest declines in age-adjusted death rates occurred for cerebrovascular disease, or stroke; the rates for this disease fell by approximately one-third. Significant declines also occurred for accidents and heart disease.

Researchers calculate *potential years of life lost* (PYLL) to gauge the relative impact of the various causes of death. PYLL is calculated by subtracting age at death from 75, the age at which a death can no longer be considered premature.

Cancer is Canada's second leading cause of death at all ages, but it is the leader in PYLL. Accidents and suicides also have a much greater impact on PYLL than on number of deaths. In 1988, these causes accounted for 12% of deaths in the under-75 age groups, but 25% of PYLL. (For more information on life expectancy and mortality rates, see Tables 4.1 to 4.5).

John Woodruff/National Archives of Canada/PA 117288

Immigration Hospital, Quebec City, Quebec.

MORBIDITY

Morbidity is measured in terms of patient-days spent in general and allied special hospitals.

The leading causes of hospitalization in 1987-88 were cardiovascular disease, mental disorders, accidents, cancer and respiratory diseases. More than 51 million patient-days were spent in public hospitals, including 4.5 million days in psychiatric hospitals. The number of days spent in general and allied special hospitals has increased steadily since 1978, while the number of days spent in psychiatric hospitals has declined. This does not mean, however, that psychiatric disorders have become less prevalent; rather, it reflects a shift to treating these disorders outside of psychiatric hospitals.

The average length of hospital stay per patient was 11.7 days in 1985-86. Up to age 44, the average stay was 6.1 days; this increased to 11 days for the 45 to 64 age group, and to 25 days for those aged 65 or older.

Mortality in Canada is most often caused by degenerative diseases, many of which require long or frequent periods of hospitalization. For this reason, the leading causes of death are also the leading causes of hospitalization. In 1987, heart disease caused one in three deaths and resulted in more than 260,000 hospitalizations. Cancer caused one in four deaths, and also

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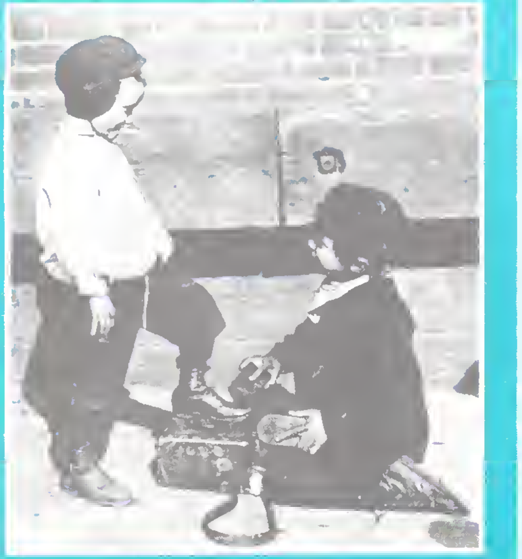
Early operating room scene.



J.J. Kelso/National Archives of Canada/C 4239

Shoeshine boy, taken 1900-10.

SMOKING

Despite the serious health risks of smoking, about 5.5 million Canadians — 3 million men and 2.5 million women — smoke cigarettes daily.

In 1986, about 28% of the population aged 15 and older smoked cigarettes regularly. In addition, some 3% were occasional smokers and about 1.5% were pipe or cigar smokers.

Smoking behaviour differs by region, although differences are lessening. In 1986, the province of Quebec had the highest percentage of regular cigarette smokers, about 34%, and British Columbia had the lowest percentage, about 22%. Prince Edward Island had a rate of about 25%; Nova Scotia and New Brunswick, 31%; Newfoundland, 31%; Ontario, 26%; Saskatchewan, 27%; Manitoba, 27%; and Alberta, 29%.

In 1986, most smokers consumed 11 to 25 cigarettes per day and 12% smoked more than 25 per day. In April 1991, the average price of a pack of 25 cigarettes was about $6. At that price, the annual cost runs into thousands of dollars for the heavy smoker.

The health risks of smoking are numerous and serious and increase with the amount smoked. There are more than 3,000 substances in cigarette smoke and many are harmful to the body. Short-term effects of smoking include a contraction of the airways to the lungs, constriction of blood vessels, and an increase in blood pressure and heart rate.

Pregnant women who inhale cigarette smoke have higher rates of pregnancy complications and tend to give birth to smaller babies.

Long-term effects of smoking include a lung disease called emphysema, common in older smokers, which leads to shortness of breath, coughing and susceptibility to infection. As well, lung cancer is the major cause of death from continuous smoking, and only a small percentage of lung cancer cases are curable.

Studies show that smokers who switch to low-tar cigarettes do not necessarily decrease their health risk — such smokers unknowingly tend to compensate by changing their smoking habits.

Public awareness of the health risks of smoking, the rise of powerful anti-smoking groups, legislation controlling smoking in public places, increased provincial and federal taxation on tobacco products and other measures have led to a gradual decline in the percentage of Canadians who smoke.

Surveys indicate that Canadians generally support restrictions on tobacco smoke in the workplace and public places such as doctors' offices, city buses, movie theatres, stores, and schools.

In 1988, Parliament passed a law requiring cigarette manufacturers to place health warnings on the outside of cigarette packages.

accounted for 251,491 hospitalizations. Accidents, assaults and suicides are also major contributors to the death rate, causing 14,001 deaths in 1987-88 and accounting for 310,087 hospitalizations. Although not a major cause of death, alcohol-related problems accounted for 577,299 patient-days in general and psychiatric hospitals in 1987-88.

For babies less than one-year-old, respiratory diseases were the leading cause of hospitalization in 1987-88, accounting for 24% of hospital days. Respiratory diseases and accidents were the leading causes of hospitalization in children aged 1 to 14. (For more information on morbidity, see Tables 4.7 to 4.9).

DISABILITY

Over the years, society's understanding of health has broadened to include mental, physical and social well-being. This change has affected how we define disability.

In the past, many people associated disability with crutches and wheelchairs; today we understand that disability includes any condition that hampers a person's day-to-day activities. This could range from total loss of sight to difficulty in tying one's shoes or cutting one's food.

The 1986-87 Health and Activity Limitation Survey (HALS) indicated that 3,316,870 Canadians, or 13.2% of the population, had some degree of disability. Of this total, 247,275 were living in health-related institutions or homes for senior citizens. Disability was reported by 6% (277,445) of respondents aged 14 and under.

Two-thirds of the disabled population aged 15 or older reported more than one type of disability. About 45% of respondents aged 65 or older reported some form of disability; in this group, 1,026,915 lived in private households and 195,080 lived in homes for seniors.

Of seniors living in private households, more than 8% said they never participated in activities outside their home. Of those who did participate, 25% said they were not satisfied with their level of activity. Most of these respondents said they were physically unable to do more; others said they could do more if they had help. Other obstacles to increased activity were high costs, inadequate transportation and distance from appropriate locations.

Recent government policies and programs have focused on eliminating the barriers that deny disabled people equal access to facilities and opportunities. The first step in this process is learning more about disabled Canadians and the hurdles they face.

In 1983-84, Statistics Canada conducted the Canadian Health and Disability Survey, the first national survey focusing specifically on disability. To build on the data collected by this survey, a question on disability was included on the 1986 Census of Population questionnaire. This question identified Canada's disabled population for an in-depth, follow-up survey — HALS, which will be conducted again in 1991.

Jack Long/National Archives of Canada/PA 157252

Rehabilitation training, 1946.

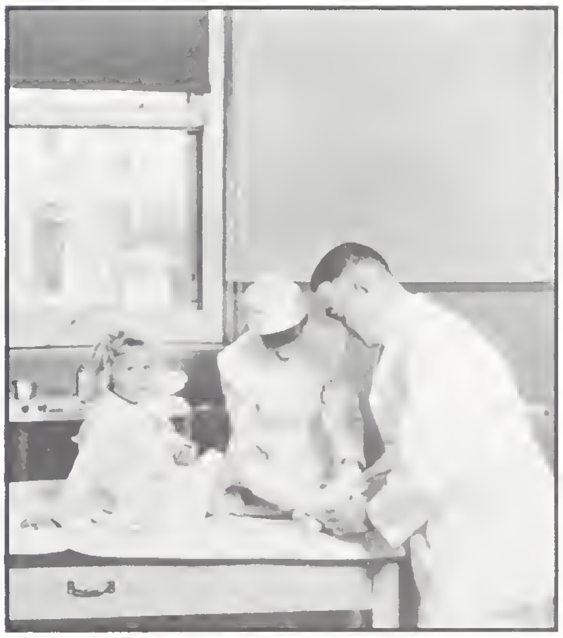
4.3 MANAGING THE SYSTEM

Although the provinces are responsible for most health care services, the federal government's spending authority makes it a principal partner in Canada's health care system. Under the Constitution Act (formerly the British North America, 1867), provincial governments have jurisdiction over establishing, maintaining and managing hospitals, asylums, charities and charitable institutions. The federal government is responsible only for establishing and maintaining marine hospitals and quarantines; but in practice federal involvement has been much more extensive.

Because the provinces and territories manage their own health care services, educational programs, health personnel and certification, Canada's health care system is highly decentralized. This means that national networking through advisory committees and professional associations is required to co-ordinate planning and standards.

The federal government funds hospital and medical care insurance programs, grant programs and Fitness and Amateur Sport. It also conducts research and information and consultation services. Health and Welfare Canada, the federal health department, provides health services, monitors the working environment of federal public servants, and enforces health regulations for people entering Canada. The department also provides for the health needs of Indians and for residents of the Yukon Territory through a network of nursing stations, health centres, hospitals and other facilities. In some cases, the department provides funds to Indian communities to allow them to plan and deliver their own health programs.

Through Health and Welfare Canada, Canada is involved in a number of international health agencies and organizations, including the World Health Organization, the Pan-American Health Organization, the Organization for Economic Co-operation and Development, and other United Nations agencies. To fulfil its international obligations, the department consults, takes part in exchanges and assignments, and enforces regulatory agreements between Canada and other countries.



Hospital for Sick Children/National Archives of Canada/C 91274

Scene from Ontario's Hospital for Sick Children, circa 1920.

HEALTH FINANCING AND EXPENDITURES

Canada's health costs in the private and government sectors reached nearly $47.9 billion in 1987, an increase of 8.2% from 1986. On a per-person basis, the cost was $1,869; this was $124 more than the year before, and nearly triple the 1975 figure. From 1960 to 1982, the proportion of the Gross National Product (GNP) spent on health care increased from 5.5% to 8.6%.

With the introduction of government-operated health care insurance plans across Canada, governments' overall share of health costs increased from 42% in 1960 to 76% in 1975, remaining at this level throughout the 1980s.

The distribution of health expenditures was relatively stable from 1975 to 1987. Institutional and related services accounted for about 55% of expenditures in 1975, falling gradually to 51% by 1987. Professional services received 22% to 23% throughout the period. Spending on drugs and appliances increased from 11% in 1975 to 14% in 1987, while the "other health expenses" category (which includes public health, capital expenditure, research, and the cost of insuring services) accounted for 12% to 13% of spending each year. (For more information on health expenditures, refer to Tables 4.10 to 4.13).

The Canada Assistance Plan ensures that disadvantaged Canadians receive adequate health care. Through the Plan, the federal government pays up to 50% of costs not covered by national hospital and medical care programs. The Plan's coverage varies by province, but can include eyeglasses, prosthetic appliances, dental services, prescribed drugs, home care services, and nursing home care.

RESEARCH AND PLANNING

Many facilities and funding sectors play a role in medical research. Hospitals investigate diseases and disabilities and develop and test treatments. Universities focus on the physiological and biochemical bases of health and disease, while industry concentrates on developing new pharmaceutical and medical devices. Federal laboratories set standards and regulations for food, cosmetics, pesticides, drinking water, air, drugs, and for radiation-emitting and medical devices; they also investigate factors affecting the diagnosis and treatment of chronic and infectious diseases.

Funding for scientific research comes from the federal and provincial governments, from private non-profit organizations, and from industry. In 1988-89, expenditures on university-based health science research and related scientific activities were $403.6 million. The bulk of this funding (45%) came from the Medical Research Council of Canada. Another 22.8% came from a variety of voluntary and non-profit organizations, while provincial programs provided 18.9%. Most research was performed in universities and affiliated teaching hospitals, and in research institutes. Applied research, which includes the development of health care delivery systems, was funded by Health and Welfare Canada (6.6%), and by private and provincial organizations. Foreign sources, such as the National Institutes of Health in the United States, contributed 3.9% of total expenditures.

The Medical Research Council is the largest federal contributor to medical research, with a 1990-91 budget of $221.6 million, an increase of $19.6 million from 1989-90. The Council funded 2,249 operating, equipment, group or program grants and 1,519 awards of funds for research personnel.

The National Health Research and Development Program (NHRDP) is also a major federal contributor, providing $30.5 million in 1988-89 for 856 health research projects and related scientific activities. The NHRDP has funded health studies, training and career awards, and national initiatives such as the National AIDS Program and the National Drug Strategy. The NHRDP also works with other agencies and with provincial governments on a number of collaborative funding endeavours, such as investigations of the health effects of exposure to magnetic fields and community health research in the North.

Through transfer payments, the provinces fund the indirect costs of research in universities and hospitals, including costs for facilities and for administration. Direct research costs, such as supplies and equipment, are met by operating grants.

HEALTH CARE FACILITIES AND SERVICES

Canada possesses a network of hospitals supplemented by a broad range of other health services. In 1988, 1,244 public, private and federal hospitals were operating in Canada, as were 6,044 special care facilities, such as nursing homes. The hospital bed-to-population ratio has remained stable from 1975 to 1989 at about 7 beds per 1,000 population, while the ratio of physicians-to-population decreased from 585 to 449.

Hospital in-patients have free access to standard ward services and to diagnostic, treatment and rehabilitation services. Canadian hospitals also offer out-patient services, including diagnostic services, physiotherapy, occupational therapy, counselling, and emergency and clinical services. These services are covered by health insurance plans in some provinces.

Smaller hospitals typically provide core hospital services — these include medical/surgical services, obstetrics, pediatrics and often intensive care and psychiatric services. Secondary and tertiary referral hospitals, usually located in larger population centres, provide a broader range of specialized and intensive services, such as care for newborn infants with medical problems. Health care services are also available through regional referral plans co-ordinated by each province. Provinces may even join forces occasionally to meet more specialized or rare treatment requirements.

A CANADIAN HEALTH SUCCESS...

Once a devastating epidemic, smallpox was Canada's first major disease to be wiped out by public health measures.

Brought to America by Spanish explorers, the first cases of smallpox in Canada were reported in 1616 by settlers in New France. The disease quickly turned into an epidemic, claiming thousands of lives.

In 1798, a vaccine was introduced to keep the disease from spreading. Provincial legislation made vaccination mandatory, but many Canadians believed the shot caused the virus and refused to be inoculated.

This resistance led to another outbreak in Montreal in 1885. Although "anti-vaccinationists" rioted in the city, tearing down posters and breaking into pharmacies and homes of city officials, the fact that 3,100 people died, two-thirds of them children, quelled the anti-vaccination movement. The introduction of immunization in schools gave municipalities the power to fight such epidemics.

During the first half of the 20th century, people became more familiar with the idea of vaccines and the incidence of smallpox declined. In 1924 in Windsor, there were 67 cases with 32 deaths, all in unvaccinated persons. By 1979, a vigorous worldwide vaccination effort had virtually eliminated smallpox.

In remote areas, the network of decentralized services includes regional "flying ambulances" and programs for health promotion, accident prevention and health education. These community and outreach programs are integrated with basic and specialized medical and hospital services. (For more information on hospital services, see Table 4.14).

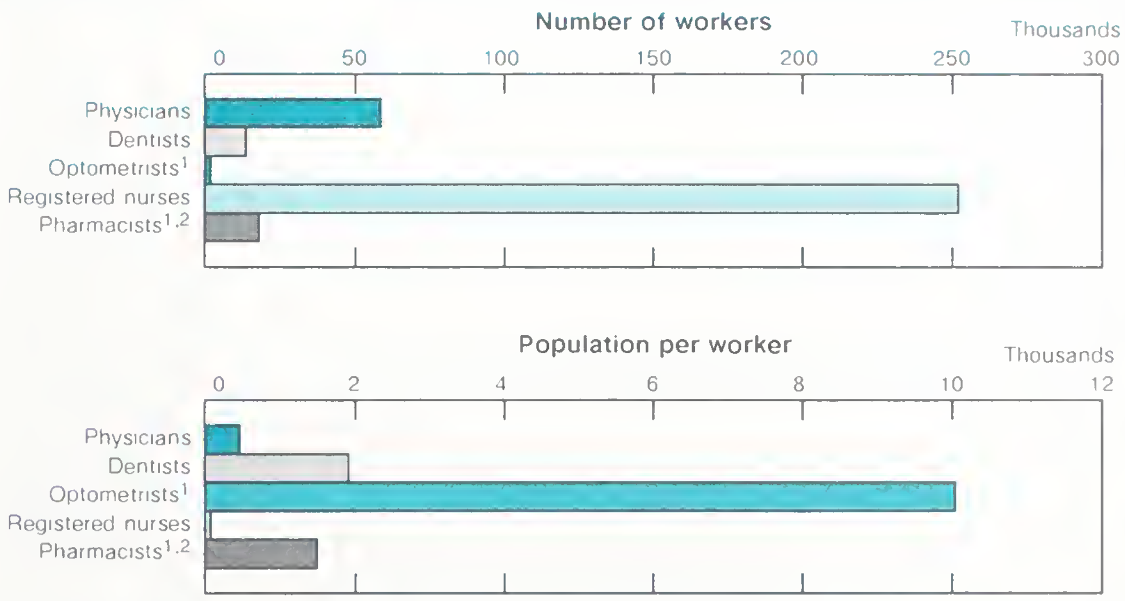
Rehabilitation and home care services are extensions of core hospital care. They are provided by public and voluntary agencies (including hospitals), by in- and out-patient facilities, and by worker compensation board centres. Financed by various federal, provincial and voluntary sources, some rehabilitation and home care services are covered by hospital and medical care insurance. Some programs are oriented to specific diseases; some are attached to hospitals or community centres. Programs range from basic nursing to an array of health and social services.

A vocational rehabilitation program for Canadians with disabilities was initiated in 1952. Since 1973, this program has been administered by Health and Welfare Canada. The federal government shares costs with the provinces for social and vocational assessment; counselling; training; maintenance allowances; tools, books and other equipment; remedial and restorative treatments; and prosthetic and orthotic appliances, wheelchairs and other mobility aids.

Special classes or schools for students with disabilities are usually operated by school boards. Most schools for the deaf and blind are residential schools operated by the provincial government.

Chart 4.3

HEALTH CARE WORKERS, 1989



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[1] 1988 data.

[2] Licensed, resident and practising pharmacists; includes non-practising and honorary pharmacists.

A FAMOUS CANADIAN DOCTOR...

Dr. Norman Bethune, one of Canada's most famous doctors, was the first person to bring blood transfusions to the front lines in times of war. During the Spanish Civil War in 1936, Bethune invented a mobile blood-transfusion service that enabled transfusions to be performed on the 1 000-kilometre frontline.

Born in 1890, in Gravenhurst, Ontario, Bethune was drawn to the conflicts in China in 1938, where he joined the fight against Japanese invaders.

He died in China in 1939 from an infection caused by a scalpel wound. His inspired commitment to his work there as a surgeon made him a martyr of the Chinese revolution, and he became one of China's most honoured foreign visitors.

Photo Geyza/National Archives of Canada/PA 124409

Dr. Norman Bethune with blood delivery wagon, France, 1939.

4.4 HELPING CANADIANS HELP THEMSELVES

HEALTH INSURANCE

Canada's nationwide health insurance system comprises interlocking provincial and territorial plans designed to give all Canadian residents prepaid access to necessary medical care. Provincial and territorial hospital and medical care insurance plans are federally regulated in areas such as the financial extent of coverage, accessibility, portability of benefits and the requirement that the plans be non-profit.

The 1984 Canada Health Act defines the criteria and conditions that each provincial health insurance plan must meet to receive full federal contributions. The Act discourages direct charges to patients for physician and hospital services. The Act built on the Hospital Insurance and

G. Moses/National Archives of Canada/DND/PA-136119

Dental operation on board H.M.C.S. UGANDA, 1945.

Diagnostic Services Act (1957) and the Medical Care Act (1966-67). The Hospital Insurance and Diagnostic Services Act had made a range of hospital and diagnostic services available at little or no direct cost to the patient. Except in psychiatric and nursing home facilities, these benefits included acute, general, chronic and convalescent hospital services, with some variation by province. The Medical Care Act required the federal government to make payments to provinces and territories operating medical care insurance plans.

In 1988-89, the nine provincial medical care insurance plans (no data were available for Prince Edward Island) made $7.1 billion in fee-for-service payments; this included 171 million visits to doctors, and 4.6 million surgical procedures. Of the additional 134 million services, more than 94 million were for radiology or laboratory services, with the remaining 40 million consisting of obstetrical, anaesthetic, surgical assistance and other diagnostic and therapeutic services. (For more information about the cost of these services, refer to Tables 4.15 and 4.16).

Many provincial plans provide additional benefits. These can include the service of dentists, optometrists, psychologists, chiropractors and podiatrists, as well as home care services, drugs and general preventive medical services. However, these benefits are frequently restricted to certain age groups (for example, dental services for children), or to a maximum value per year. Some Canadians belong to non-government health plans that cover these areas. For example, about 43.5% of the population, or 11.4 million Canadians, were covered by dental insurance in 1989. For disadvantaged Canadians, the Canada Assistance Plan ensures access to adequate medical treatment.

How the provinces organize, finance and administer their health insurance plans varies. Some administer their plans directly through provincial health departments; other plans are managed by separate public agencies reporting to the provincial health minister. Some provinces have two plans, one controlled by the province and another by a public agency.

Until 1977, federal government contributions were based on what the provinces spent on their hospital and medical care insurance plans. In April 1977, Established Programs Financing legislation tied federal contributions to the growth of the Gross Domestic Product and to population changes. Federal contributions are also made toward the cost of certain extended health care services, such as nursing homes and adult residential, ambulatory and home care services.

Administering these programs is a provincial responsibility. Each province is also free to determine how its share of costs will be financed. Most provinces use general revenues, but Alberta and British Columbia impose premiums, which are reduced for residents with limited income. In Alberta, residents aged 65 years or over are exempt from paying the premium.

The provinces differ slightly in how medical services are delivered and how physicians are paid. However, most physicians are paid on a fee-for-service basis; this accounts for about 95% of the national cost of insured medical services. Other arrangements include uniform per capita fees, salaries, sessional payments, contract services and incentives for practising in medically underserviced areas.

Hospital for Sick Children/National Archives of Canada/C-91325

Out-patient service in Ontario's Hospital for Sick Children, circa 1910.

ALCOHOL CONSUMPTION

Most Canadian adults drink alcoholic beverages and while surveys show most approve of recreational drinking, alcohol consumption is actually declining.

Indeed, consumption of alcoholic beverages is relatively moderate compared with that of the 18th and 19th centuries. Before the 19th century, alcoholic beverages such as cider, wine and beer were a part of most people's daily diet in Canada—and alcohol addiction was largely ignored since drinking was the norm. By the turn of the last century, stronger, distilled drinks began to grow in popularity—along with movements calling for the moderate use of alcohol and the banning of alcoholic beverages altogether.

During World War I, prohibition—the outlawing of the manufacture and sale of alcoholic beverages—became national policy, but much illegal manufacture and evasion took place. Shortly after the war, the provinces put in place systems of government-controlled distribution and licensing that continue to operate today.

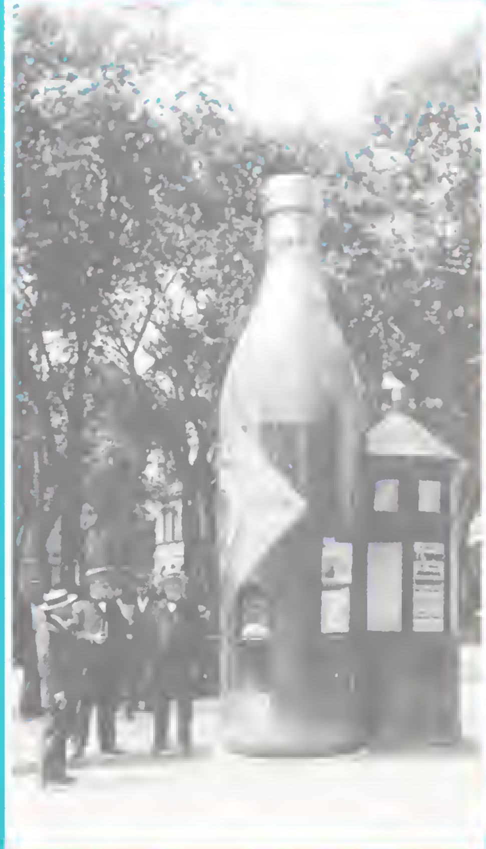
Currently, about 80% of Canadian adults drink alcoholic beverages at least on occasion. Because beer and ale account for about 51% of the absolute alcohol consumed, Canada is classified internationally as a beer-drinking country. About 32% of absolute alcohol consumption is of spirits such as whiskey, rye and vodka. While Canadians consume relatively small amounts of wine—about 11 litres annually apiece—sales of wine are increasing.

Canadian adults purchased an average of 10.2 litres of absolute alcohol per person in 1986, slightly less than previous years. Alcohol consumption varies according to income, region and sex. Wealthy Canadians are more likely to drink alcoholic beverages and to consume more annually. In contrast, the less wealthy are more likely to be non-drinkers. Regionally, consumption is highest in northern and western Canada. In 1986, New Brunswick had the lowest consumption rate—7.8 litres of alcohol per adult—and the Yukon had the highest rate—18.3 litres per adult. As well, studies show more men drink than women—and more often.

The government-controlled licensing and distribution systems allow the federal and provincial governments to raise substantial revenues from the sale of alcoholic products—billions of dollars are collected each year. However, studies indicate that the costs to society resulting from alcohol abuse—such as alcohol-related health care expenses, reduced worker productivity, and law enforcement costs—are higher than revenues generated from alcohol sales.

Recent estimates put the number of alcoholics in Canada at about 600,000, highlighting the seriousness of the alcohol abuse problem. As well, some 30,000 Canadians are admitted to hospital each year with alcohol health-related problems.

Health problems related to abusive drinking include disease of the liver, heart, pancreas, stomach and intestines.



National Archives of Canada/C 14075

Advertising display, 1895.

HEALTH PROTECTION

The federal and provincial governments protect the public from unsafe food, drugs and cosmetics, and from radiation-emitting devices and medical devices. Federal programs also protect Canadians from harmful microbiological agents, environmental pollutants and contaminants, and fraudulent drugs and devices.

Standards for food safety, cleanliness, and nutritional quality are determined by laboratory research and by data from Canadian and international sources. These standards cover the use of food additives and the maximum levels of agricultural chemical residues permitted in foods. They are maintained by regular inspections of domestic and imported foods. In addition, all food additives and agricultural chemicals are thoroughly evaluated before they can be used in food sold in Canada.

Manufacturers of new drugs must give government regulators information about the drug's therapeutic properties and possible side effects. After a new drug has been deemed safe and effective, its performance is closely monitored.

IMMUNIZATION

Immunization against disease, an idea which was discovered in China about 900 years ago, was first tried on a large scale in Canada in the 1930s, when infants and children were immunized against diphtheria. The results were striking: occurrences of diphtheria plummeted in the next 20 years. In fact in 1924, there were some 9,000 cases; in 1987, there were four.

Another deadly disease reduced through immunization is poliomyelitis. The rate of polio incidence had been climbing in Canada since the 1920s, and in 1953 some 8,700 cases were reported, 5,000 of which involved paralysis, with nearly 500 deaths. A vaccine developed by Dr. Jonas E. Salk (with help from Toronto's Connaught Laboratories) proved to be the answer, and in 1955, 800,000 Canadian children were immunized against polio.

In the next year, the number of polio cases dropped dramatically to 607, and had fallen to 89 by 1962. As a result of this success, immunization programs were expanded to protect Canadians against tetanus, whooping cough, rubella and measles.

POLIOMYELITIS

Canadian Tribune Publishing Company/National Archives of Canada/PA 93671

Poliomyelitis quarantine sign, Ontario, 1947.

To combat disease in Canada, the national laboratory of Health and Welfare Canada monitors seasonal maladies (such as influenza), sexually transmitted diseases, non-communicable diseases and potential disease threats. This surveillance helps identify risk factors and changes in disease patterns. By investigating outbreaks of communicable diseases and by providing laboratory diagnostic services, the department is able to rapidly detect and control infections. In recent years, provincial laboratories have contributed to control of infectious diseases through unique testing agents and through improved procedures for training and for diagnostic quality assurance.

In the environmental health field, government agencies study the effects of potentially hazardous chemical and physical environments. Recent studies have investigated the effects of tobacco smoke, pesticides and household products.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Since the early 1980s, public health officials have become increasingly concerned about the incidence of Acquired Immunodeficiency Syndrome (AIDS), a virus that attacks the body's immune system. Most persons with AIDS have been exposed to the virus through sexual contact with infected individuals. A small number of people have been infected after receiving blood products or transfusions from donors infected with the virus.

The first case of AIDS in Canada was diagnosed in 1979; since then, incidence has risen rapidly. By 1988, 2,118 cases had been reported, and 54% of these had resulted in death.

The Federal Centre for AIDS (FCA) co-ordinates all government AIDS programs. These include national AIDS surveillance, prevention and public education, clinical trials of drugs and vaccines, epidemiological studies, research, and community-based support. The FCA has ties with many government and non-government organizations, including the World Health Organization (WHO) and other international agencies. The FCA also maintains the National Retrovirus Centre and offers state-of-the-art diagnostic services.

PUBLIC HEALTH SERVICES AND VOLUNTARY AGENCIES

In urban centres, municipal health departments co-ordinate public health services. In rural regions, most provinces delegate this responsibility to health units. Several provinces provide health services to sparsely populated northern areas. Provincial health departments co-operate with regional and local health authorities to respond to community needs. Voluntary agencies are also an intrinsic part of the community health network, complementing the work of health departments at a grassroots level.

To help educate Canadians on health issues, provincial health departments offer public health consulting services. These include maternal and child health services through clinics and schools and through visits to homes and hospitals. Nutrition consultants work in schools, health and welfare agencies, nursing homes, community centres and other institutions providing diet counselling to special groups, such as diabetics. Other consultants manage accident prevention and health promotion programs.

Public dental health programs focus on preventive care. Dental clinics operated by local health services are usually restricted to low-income and school-age residents. Each province and territory has a dental-care program for welfare recipients. Some provincial governments send dental teams to remote areas, while Health and Welfare Canada provides services to Indian and Inuit people. Other programs fund surveys and research, or the training of dentists, dental hygienists, therapists, technicians and assistants.

To help local health agencies and the medical profession protect community health and control infectious disease, each province has a central public health laboratory with branch labs. These labs concentrate on medical testing for hospitals and physicians, and on public-health testing of milk, water and food. Local health authorities organize public immunization clinics for protection against diphtheria, tetanus, poliomyelitis, whooping cough, rubella and measles. Physicians are required by law to report incidents of certain communicable diseases, including tuberculosis, measles and sexually-transmitted diseases. This system alerts public health officials to possible epidemics and helps them gauge the effectiveness of immunization programs. In larger provinces, health departments have special divisions to deal with communicable disease control. In smaller provinces, this function is combined with one or more community health services.

A host of voluntary agencies help extend government health programs. Historically, these agencies have played a major role in heightening public awareness of health issues, thereby contributing to the development of Canada's health care system. Their close ties with the community make them aware of problems as they emerge, and help them develop quick and innovative responses. The annual value of volunteer services in the health and social services sector is an estimated $1 billion.

In 1990-91, Health and Welfare Canada gave sustaining grants totalling $2.9 million to 49 national voluntary organizations. The department also contributed to research and to other innovative projects.

Voluntary agencies help rehabilitating patients in hospitals, in-and out-patient facilities, and worker compensation board centres. Funding comes from various provincial, federal and voluntary agencies.

Sources

Health and Welfare Canada.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Health Reports*, quarterly. 82-003.
- *Cancer in Canada*, annual. 82-207. Discontinued, last issue 1983.
- *Tuberculosis Statistics, Morbidity and Mortality*, annual. 82-212. Discontinued, last issue 1986.
- *Cardio-vascular Disease in Canada*, 1986. 82-544.
- *Canadian Youth: Perspectives on their Health*, 1985. 82-545.
- *Therapeutic Abortions, Canada*, annual. 82-546.
- *Report of the Canadian Health and Disability Survey, 1983-1984*, 1986. 82-555.
- *Annual Return of Hospitals, Hospital Indicators*, annual. 83-233. Discontinued, last issue 1982/83.
- *Mortality, Summary List of Causes, Vital Statistics*, volume III, annual. 84-206. Discontinued, last issue 1986.

TABLES

LEGEND

. .	*not available*	*e*	*estimate*
. . .	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

4.1 LIFE EXPECTANCY, CANADA

Year	Males				Females			
	At birth	20 years	40 years	60 years	At birth	20 years	40 years	60 years
1931	60.00	49.05	31.98	16.29	62.10	49.76	33.02	17.15
1941	62.96	49.57	31.87	16.06	66.30	51.76	33.99	17.62
1951	66.33	50.76	32.45	16.49	70.83	54.41	35.63	18.64
1956	67.61	51.19	32.74	16.54	72.92	55.80	36.69	19.34
1961	68.35	51.51	32.96	16.73	74.17	56.65	37.45	19.90
1966	68.75	51.50	33.01	16.81	75.18	57.37	38.15	20.58
1971	69.34	51.71	33.22	16.95	76.36	58.18	38.99	21.39
1976	70.19	52.09	33.59	17.23	77.48	58.95	39.67	21.96
1981	71.88	53.39	34.72	17.96	78.98	60.08	40.73	22.85
1983-85	72.92	54.20	35.43	18.39	79.83	60.81	41.38	23.36
Gains								
1931-76	10.19	3.04	1.61	0.94	15.38	9.19	6.65	4.81
1931-85	12.92	5.15	3.45	2.10	17.73	11.05	8.36	6.21

4.2 INFANT MORTALITY RATE PER 1,000 LIVE BIRTHS, CANADA, SELECTED YEARS, 1921-88

Year	Male	Female	Both sexes	Year	Male	Female	Both sexes
1921	98.2	77.4	102.1	1973	17.4	13.6	15.5
1931	95.7	76.0	86.0	1974	16.6	13.4	15.0
1941	68.3	53.0	61.1	1975	15.9	12.6	14.3
1951	42.7	34.0	38.5	1976	15.0	11.9	13.5
1961	30.5	23.7	27.2	1977	13.5	11.2	12.4
1962	30.6	24.3	27.6	1978	13.3	10.5	12.0
1963	29.6	22.9	26.3	1979	12.2	9.5	10.9
1964	27.8	21.4	24.7	1980	11.6	9.2	10.4
1965	26.2	20.8	23.6	1981	10.8	8.4	9.6
1966	25.8	20.2	23.1	1982	10.3	7.8	9.1
1967	24.2	19.6	22.0	1983	9.3	7.7	8.5
1968	22.9	18.6	20.8	1984	8.9	7.2	8.1
1969	21.7	16.9	19.3	1985	8.7	7.1	7.9
1970	21.2	16.3	18.8	1986	8.7	7.0	7.9
1971	19.9	15.1	17.5	1987	8.4	6.2	7.3
1972	19.1	15.0	17.1	1988	8.2	6.4	7.2

4.3 INFANT DEATHS AND STILLBIRTHS, CANADA

Type	Number						Rate[1]					
	1983	1984	1985	1986	1987	1988	1983	1984	1985	1986	1987	1988
Infant deaths, (less than 1 year)	3,182	3,058	2,982	2,938	2,706	2,705	8.5	8.1	7.9	7.9	7.3	7.2
Neonatal deaths (less than 28 days)												
Less than 7 days	1,740	1,629	1,641	1,577	1,403	1,440	4.6	4.3	4.4	4.2	3.8	3.8
7 days to 27 days	300	313	313	332	276	279	0.8	0.8	0.8	0.9	0.7	0.8
Total	2,040	1,942	1,954	1,909	1,679	1,719	5.5	5.2	5.2	5.1	4.5	4.6
Post-neonatal deaths (28 days to 1 year)	1,142	1,116	1,028	1,029	1,027	986	3.0	3.0	2.7	2.8	2.8	2.6
Stillbirths (28+ weeks gestation)	1,828	1,678	1,629	1,574	1,584	1,435	4.9	4.4	4.3	4.2	4.3	3.8
Perinatal deaths (stillbirths plus deaths at less than 7 days)[1]	3,568	3,307	3,270	3,151	2,987	2,875	9.5	8.7	8.7	8.4	8.1	7.6

[1] *Perinatal rates per 1,000 live- and still-born infants, all other rates per 1,000 live births.*

4.4 LEADING CAUSES OF DEATH, 1988

Cause	Male		Female	
	No.	Rate[1]	No.	Rate[1]
Diseases of the circulatory system	41,084	321.5	37,299	284.0
Cancer	28,100	219.9	22,649	172.4
Accidents and adverse effects	9,519	74.5	4,104	31.2
Respiratory diseases	9,458	74.0	6,517	49.6
Diseases of the digestive system	3,651	28.6	3,297	25.1
Endocrine diseases, etc.	2,309	18.1	2,766	21.1
Diseases of the nervous system	2,211	17.3	2,281	17.4
Diseases of the genito-urinary system	1,476	11.6	1,362	10.4
All other causes	6,279	49.1	5,618	42.8
Total, causes	104,087	814.6	85,893	654.0

[1] *Per 100,000 population.*

4.5 CANCER DEATHS, 1987

ICD-9[1]	Cause	Rank	Number	Percentage	Rate[2]
	Male				
162	Lung	1	8,733	32.6	69.1
185	Prostate	2	2,847	10.6	22.5
153	Colon	3	2,104	7.9	16.6
151	Stomach	4	1,357	5.1	10.7
157	Pancreas	5	1,357	5.1	10.7
199	Site unspecified	6	1,116	4.2	8.8
154	Rectum	7	802	3.0	6.3
188	Bladder	8	783	2.9	6.2
191	Brain	9	698	2.6	5.5
150	Oesophagus	10	670	2.5	5.3
	All other cancers		6,286	23.5	49.9
140-208	Total, all cancers	.	26,753	100.0	211.6

4.5 CANCER DEATHS, 1987 (concluded)

ICD-9[1]	Cause	Rank	Number	Percentage	Rate[2]
	Female				
174	Breast	1	4,350	19.9	33.5
162	Lung	2	3,547	16.2	27.3
153	Colon	3	2,253	10.3	17.4
157	Pancreas	4	1,263	5.8	9.7
183	Ovary	5	1,152	5.3	8.9
199	Site unspecified	6	1,073	4.9	8.3
151	Stomach	7	829	3.8	6.4
159	Other and ill-defined sites	8	592	2.7	4.6
202	Other of lymphoid and histiocytic tissue	9	592	2.7	4.6
154	Rectum	10	582	2.7	4.5
	All other cancers		5,626	25.7	43.2
140-208	Total, all cancers		21,859	100.0	168.4

[1] *International Classification of Diseases, 9th Revision.*

[2] *Per 100,000 population.*

4.6 NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES, 1989

Disease	ICD-9	Province or territory												
		Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Yukon	NWT	Canada
AIDS	042-044	4	1	22	8	308	478	15	8	80	193	[1]	1	1,118
Amoebiasis	006	10	[1]	16	28	108	1,384	43	80	138	527	[1]	[1]	2,334
Campylobacteriosis	008.41	123	103	262	217	1,768	6,312	[1]	294	990	1,526	3	4	11,602
Chickenpox	052	1,033	[1]	443	162	[1]	24,310	[1]	1,392	12,310	1,439	72	399	41,560
Giardiasis	007.1	49	11	105	106	605	4,390	75	798	1,504	1,835	29	34	9,541
Gonococcal infections[2]	098	80	15	451	148	1,694	9,250	1,540	1,000	1,977	1,493	97	1,365	19,110
Hepatitis A	070.0, 070.1	7	[1]	5	5	137	527	38	131	255	747	[1]	2	1,854
Hepatitis B	070.2, 070.3	28	[1]	159	85	1,308	682	37	124	124	903	2	4	3,456
Measles	055	39	6	6	50	10,184	663	6	16	19	146	1	9	11,145
Pertussis	033	75	27	90	20	359	543	107	70	706	193	218	32	2,440
Rubella	056	5	[1]	11	7	148	171	12	135	331	563	[1]	1	1,384
Salmonellosis[3]	003	308	40	182	248	1,749	5,251	249	518	1,069	1,022	9	28	10,673
Shigellosis	004	2	3	28	5	399	734	52	279	162	228	[1]	2	1,894
Syphilis, other	090, 092-097	1	[1]	6	[1]	222	899	29	[1]	36	65	[1]	[1]	1,258
Tuberculosis	010-018	42	2	34	29	376	700	100	216	133	288	7	55	1,982

[1] *No cases reported.*

[2] *Includes all 098 categories except 098.4.*

[3] *Excludes typhoid 002.0 and paratyphoid 002.1 to 002.9.*

4.7 SEPARATIONS, RATES AND AVERAGE DAYS FOR OPERATIONS[1] AND TREATMENTS, BY AGE GROUP, 1987-88[2]

Operation		Sex	Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+
Certain diagnostic and therapeutic procedures	Number	M	203,188	6,102	7,243	3,878	3,437	9,926	13,708	16,474	21,058	34,833	86,529
		F	213,361	4,243	5,072	2,937	2,964	16,953	21,701	17,218	19,406	29,325	93,542
	Per 100,000	M	1,607	3,218	973	419	376	481	598	870	1,616	3,066	7,318
		F	1,642	2,343	716	334	341	850	936	906	1,493	2,432	5,710
	Av. days	M	14.6	9.3	5.9	6.1	9.0	11.0	11.5	10.5	10.5	13.2	19.7
		F	17.1	10.4	5.5	5.7	6.9	7.2	8.5	11.3	11.8	14.2	25.5
Nervous system	Number	M	29,684	1,564	1,107	648	555	2,449	4,338	4,922	4,411	4,532	5,158
		F	24,543	1,112	830	471	403	1,601	3,177	3,882	3,732	3,775	5,560
	Per 100,000	M	235	825	149	70	61	119	189	260	339	399	436
		F	189	614	117	53	46	80	137	204	287	313	339
	Av. days	M	13.0	10.9	7.6	8.3	12.4	16.4	10.8	9.0	10.9	13.9	20.7
		F	13.0	14.6	9.6	8.8	12.2	10.8	9.2	9.1	10.4	14.6	19.9
Endocrine system	Number	M	1,893	6	99	65	33	164	262	315	317	380	252
		F	5,343	11	68	51	61	375	906	1,047	1,023	909	892
	Per 100,000	M	15	3	13	7	4	8	11	17	24	33	21
		F	41	6	10	6	7	19	39	55	79	75	54
	Av. days	M	8.5	6.8	3.1	3.5	4.4	5.9	6.9	7.0	8.0	10.1	16.0
		F	7.3	6.5	4.6	4.2	5.4	6.1	5.9	6.3	6.4	8.6	10.5
Eyes	Number	M	35,231	215	821	614	405	1,295	1,790	1,737	2,669	5,739	19,946
		F	48,122	222	707	462	296	774	1,053	1,361	2,309	5,940	34,998
	Per 100,000	M	279	113	110	66	44	63	78	92	205	505	1,687
		F	370	123	100	52	34	39	45	72	178	493	2,136
	Av. days	M	4.8	4.3	2.1	3.0	4.0	3.9	4.0	4.6	4.2	4.1	5.4
		F	4.7	5.6	2.1	2.5	6.4	3.6	4.5	4.8	3.5	4.0	4.9
Ears	Number	M	11,398	272	2,154	2,039	944	1,083	1,260	1,278	886	803	679
		F	9,847	155	1,257	1,456	749	1,022	1,345	1,317	998	862	686
	Per 100,000	M	90	143	289	220	103	52	55	67	68	71	57
		F	76	86	177	165	86	51	58	69	77	71	42
	Av. days	M	4.2	8.8	2.3	1.9	2.6	3.5	3.0	3.1	3.8	4.6	23.2
		F	3.4	3.9	2.1	2.0	2.5	3.2	3.2	3.1	4.9	4.0	8.4
Nose, mouth and pharynx	Number	M	64,822	216	9,624	12,131	4,165	10,570	9,583	6,269	4,284	4,052	3,928
		F	59,992	150	6,929	11,611	6,538	14,100	7,439	4,281	2,796	2,596	3,552
	Per 100,000	M	513	114	1,292	1,310	456	512	418	331	329	357	332
		F	462	83	978	1,319	752	707	321	225	215	215	217
	Av. days	M	5.5	7.8	1.8	2.0	4.1	3.7	4.8	4.1	7.5	12.3	26.3
		F	5.2	7.1	2.0	1.8	2.9	2.8	3.2	4.3	4.4	10.0	38.5
Respiratory system	Number	M	21,717	154	178	151	150	1,256	1,464	1,518	2,460	5,377	9,009
		F	13,132	139	134	94	86	590	939	1,127	1,779	2,999	5,245
	Per 100,000	M	172	81	24	16	16	61	64	80	189	473	762
		F	101	77	19	11	10	30	40	59	137	249	320
	Av. days	M	18.2	54.4	13.4	9.5	13.4	13.3	12.3	14.1	15.8	19.0	20.4
		F	19.4	54.8	17.4	9.3	14.8	12.6	14.1	15.8	15.4	17.2	23.8
Cardiovascular system	Number	M	86,013	921	833	428	377	1,541	3,022	7,582	15,228	25,186	30,895
		F	53,405	653	720	401	323	1,372	3,277	5,258	7,570	12,315	21,516
	Per 100,000	M	680	486	112	46	41	75	132	400	1,169	2,217	2,613
		F	411	361	102	46	37	69	141	277	582	1,021	1,313
	Av. days	M	11.1	26.1	11.0	10.1	9.9	10.7	9.8	8.4	8.7	10.1	13.4
		F	12.3	29.0	11.5	11.2	10.4	11.0	8.9	8.8	9.3	11.1	15.2
Lymphatic system	Number	M	10,051	86	310	210	218	772	889	806	1,041	1,907	3,812
		F	9,594	58	241	174	163	637	805	907	1,059	1,601	3,949
	Per 100,000	M	79	45	42	23	24	37	39	43	80	168	322
		F	74	32	34	20	19	32	35	48	81	133	241
	Av. days	M	16.6	13.6	9.4	8.7	9.8	12.6	13.1	13.4	16.1	16.8	20.3
		F	17.7	12.0	10.7	9.6	9.9	11.9	14.5	11.0	12.8	16.5	23.8
Digestive system and abdominal region	Number	M	156,202	3,729	3,111	2,911	3,692	11,813	16,723	19,236	21,449	28,945	44,593
		F	154,809	1,121	1,141	1,683	2,814	17,711	28,567	22,256	18,305	21,700	39,511
	Per 100,000	M	1,235	1,967	418	314	404	573	729	1,016	1,647	2,548	3,771
		F	1,191	619	161	191	324	888	1,232	1,172	1,408	1,799	3,412
	Av. days	M	10.4	8.0	4.5	5.0	6.2	6.3	6.7	7.6	8.9	10.6	15.9
		F	11.3	17.1	7.9	5.4	6.0	6.0	6.4	7.8	10.1	12.6	19.6

4.7 SEPARATIONS, RATES AND AVERAGE DAYS FOR OPERATIONS[1] AND TREATMENTS, BY AGE GROUP, 1987-88[2] (concluded)

Operation		Sex	Total	Under 1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+
Urinary tract	Number	M	43,520	343	533	549	434	1,910	3,712	4,908	5,247	7,931	17,953
		F	31,460	188	563	490	332	1,890	3,892	4,764	4,806	5,229	9,306
	Per 100,000	M	344	181	72	59	47	93	162	259	403	698	1,518
		F	242	104	79	56	38	95	168	251	370	434	568
	Av. days	M	10.9	12.3	9.0	8.5	9.1	9.5	8.1	8.2	8.1	9.5	13.9
		F	13.0	9.9	8.0	10.2	8.6	7.3	7.8	8.4	10.9	12.4	20.6
Male genital organs	Number	M	67,764	1,068	3,897	2,052	1,584	2,353	3,200	2,586	3,062	12,437	35,525
		F	7	2	—	1	1	1	2	—	—	—	—
	Per 100,000	M	536	563	523	222	173	114	140	137	235	1,095	3,004
		F	—	1	—	—	—	—	—	—	—	—	—
	Av. days	M	8.8	5.1	2.9	2.7	2.7	3.5	3.1	4.3	5.9	7.7	12.0
		F	14.1	25.0	—	4.0	4.0	7.0	17.0	—	—	—	—
Female genital organs	Number	M	—	—	—	—	—	—	—	—	—	—	—
		F	190,811	15	54	97	379	21,266	65,750	51,428	25,797	12,138	13,887
	Per 100,000	M	—	—	—	—	—	—	—	—	—	—	—
		F	1,468	8	8	11	44	1,066	2,835	2,708	1,984	1,006	848
	Av. days	M	—	—	—	—	—	—	—	—	—	—	—
		F	5.4	7.1	4.6	3.9	4.2	3.1	3.9	5.6	6.6	7.5	11.5
Obstetrical procedures	Number	M	—	—	—	—	—	—	—	—	—	—	—
		F	384,427	—	—	—	318	118,161	237,296	28,493	159	—	—
	Per 100,000	M	—	—	—	—	—	—	—	—	—	—	—
		F	2,958	—	—	—	37	5,923	10,230	1,500	12	—	—
	Av. days	M	—	—	—	—	—	—	—	—	—	—	—
		F	4.8	—	—	—	4.7	4.6	4.8	5.3	5.2	—	—
Musculoskeletal system	Number	M	122,979	436	1,866	4,285	5,930	23,258	23,734	17,527	12,859	13,950	19,134
		F	110,976	404	1,618	2,905	4,153	12,158	11,950	11,769	11,601	16,018	38,400
	Per 100,000	M	972	230	251	463	649	1,127	1,035	925	987	1,228	1,618
		F	854	223	228	330	478	609	515	620	892	1,328	2,344
	Av. days	M	10.2	7.0	5.3	5.2	5.9	6.2	6.1	7.4	8.7	12.6	25.2
		F	14.2	8.5	5.9	4.6	5.8	5.7	6.0	7.3	8.2	11.7	26.4
Breast	Number	M	1,659	—	4	1	120	517	235	128	142	193	319
		F	33,065	9	1	—	59	3,183	4,257	6,217	6,178	5,592	7,569
	Per 100,000	M	13	—	1	—	13	25	10	7	11	17	27
		F	254	5	—	—	7	160	184	327	475	464	462
	Av. days	M	3.6	—	2.5	5.0	2.5	2.7	2.9	3.2	4.0	5.0	5.3
		F	6.5	4.3	1.0	—	3.1	3.1	3.4	4.2	5.6	6.4	12.4
Skin and subcutaneous tissue	Number	M	27,389	423	953	886	1,090	5,388	5,020	3,284	2,509	2,871	4,965
		F	25,861	324	812	633	787	4,479	3,959	3,300	2,718	2,884	5,965
	Per 100,000	M	217	223	128	96	119	261	219	173	193	253	420
		F	199	179	115	72	91	225	171	174	209	239	364
	Av. days	M	17.2	7.9	9.0	5.8	9.8	6.9	8.8	11.3	12.8	19.0	48.0
		F	21.3	8.3	7.4	6.1	4.8	6.0	7.1	9.5	12.4	21.1	59.3
Procedures not elsewhere classified	Number	M	1,359	20	95	61	21	68	99	115	143	254	483
		F	1,412	11	40	39	23	128	209	146	153	171	492
	Per 100,000	M	11	11	13	7	2	3	4	6	11	22	41
		F	11	6	6	4	3	6	9	8	12	14	30
	Av. days	M	9.7	2.3	1.3	1.4	2.6	3.8	3.6	5.3	6.4	8.3	17.9
		F	7.6	16.1	2.7	1.4	4.0	3.5	3.1	5.1	6.0	7.0	12.8
Total, all operations	Number	M	884,869	15,555	32,828	30,909	23,155	74,363	89,039	88,685	97,765	149,390	283,180
		F	1,370,167	8,817	20,187	23,505	20,449	216,401	396,524	164,771	110,389	124,054	285,070
	Per 100,000	M	6,997	8,204	4,408	3,339	2,534	3,604	3,882	4,683	7,505	13,149	23,950
		F	10,542	4,869	2,850	2,670	2,353	10,847	17,095	8,675	8,490	10,286	17,400
	Av. days	M	11.2	10.2	4.2	3.9	6.2	7.1	7.5	8.1	9.2	11.4	17.1
		F	9.5	13.4	4.8	3.6	5.2	4.9	5.1	6.9	8.9	11.8	20.9

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[1] *Excludes newborn and data for Yukon and Northwest Territories.*

[2] *Fiscal year ending Mar. 31.*

4.8 THERAPEUTIC ABORTIONS AND RATES, 1986-88

Province or territory of residence	Number of therapeutic abortions			Therapeutic abortions per 1,000 females 15-44 years			Therapeutic abortions per 100 live births		
	1986	1987	1988	1986	1987	1988	1986	1987	1988
Newfoundland	367	475	472	2.5	3.3	3.3	4.5	6.1	6.3
Prince Edward Island	13	35	69	0.4	1.2	2.3	0.7	1.8	3.5
Nova Scotia	1,704	1,690	1,730	8.0	7.9	8.1	13.8	14.0	14.2
New Brunswick	358	357	475	2.0	2.1	2.7	3.7	3.7	4.9
Quebec	12,410	11,871	12,773	7.5	7.3	7.8	14.7	14.2	14.7
Ontario	26,928	27,935	28,853	12.1	12.4	12.7	20.1	20.8	20.9
Manitoba	2,568	2,649	2,828	10.2	10.6	11.2	15.1	15.6	16.6
Saskatchewan	1,048	1,229	1,293	4.6	5.5	5.8	6.0	7.2	7.7
Alberta	6,313	5,540	6,296	10.5	9.2	10.5	14.4	13.2	15.0
British Columbia	11,386	11,410	10,951	16.5	16.5	15.6	27.1	27.3	25.5
Yukon	119	143	118	18.9	21.0	17.1	24.6	29.9	22.6
Northwest Territories	248	248	279	19.2	19.1	20.8	16.5	16.3	17.9
Residence unknown	—	3	—						
Canada	63,462	63,585	66,137	10.2	10.2	10.6	17.0	17.2	17.6

4.9 PSYCHIATRIC HOSPITALS, SEPARATIONS, BY PROVINCE, SEX AND AGE, 1987-88

Province	Sex	Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-64	65-74	75+	Median age
Newfoundland	M	795	—	—	—	45	82	226	205	187	38	12	37
	F	356	—	—	—	21	46	97	80	79	30	3	36
	T	1,151	—	—	—	66	128	323	285	266	68	15	36
Prince Edward Island	M	108	—	—	4	9	18	36	19	14	6	2	32
	F	44	—	—	2	5	3	13	9	9	2	1	33
	T	152	—	—	6	14	21	49	28	23	8	3	32
Nova Scotia	M	1,693	—	11	37	143	181	427	395	348	97	54	36
	F	1,036	—	—	15	54	86	222	217	296	81	65	39
	T	2,729	—	11	52	197	267	649	612	644	178	119	37
New Brunswick	M	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	—	—	—	—	—	—	—	—	—	—	—
	T	—	—	—	—	—	—	—	—	—	—	—	—
Quebec	M	5,022	17	26	64	184	470	1,405	1,074	1,295	322	165	37
	F	4,104	3	7	40	137	243	896	936	1,250	338	254	42
	T	9,126	20	33	104	321	713	2,301	2,010	2,545	660	419	39
Ontario	M	10,164	—	—	29	470	1,394	3,415	2,221	1,869	440	326	34
	F	6,863	1	1	20	304	677	1,828	1,472	1,641	508	411	38
	T	17,027	1	1	49	774	2,071	5,243	3,693	3,510	948	737	35
Manitoba	M	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	—	—	—	—	—	—	—	—	—	—	—
	T	—	—	—	—	—	—	—	—	—	—	—	—
Saskatchewan	M	120	—	—	1	3	10	17	11	35	24	19	57
	F	115	—	—	—	1	3	17	10	40	16	28	57
	T	235	—	—	1	4	13	34	21	75	40	47	57
Alberta	M	1,579	—	—	27	211	219	463	280	236	54	89	31
	F	815	—	—	5	46	80	226	151	173	75	59	38
	T	2,394	—	—	32	257	299	689	431	409	129	148	33
British Columbia	M	623	2	—	—	28	45	161	122	115	74	76	40
	F	435	—	—	—	11	35	94	77	78	56	84	45
	T	1,058	2	—	—	39	80	255	199	193	130	160	42
Canada	M	20,104	19	37	162	1,093	2,419	6,150	4,327	4,099	1,055	743	35
	F	13,768	4	8	82	579	1,173	3,393	2,952	3,566	1,106	905	40
	T	33,872	23	45	244	1,672	3,592	9,543	7,279	7,665	2,161	1,648	37

4.10 TOTAL HEALTH EXPENDITURES, PUBLIC AND PRIVATE, SELECTED YEARS, 1960-87

Year	Expenditures $'000,000	Annual percentage increase	Percentage of GNP	Per capita $
1960	2,142	—	6	120
1965	3,415	10	6	174
1970	6,254	13	7	293
1975	12,268	15	7	540
1980	22,704	13	8	943
1981	26,650	17	8	1,094
1982	31,150	17	9	1,266
1983	34,512	11	9	1,391
1984	37,310	8	9	1,493
1985	40,408	8	9	1,605
1986	44,286	10	9	1,745
1987	47,935[p]	8	9	1,869

4.11 PERCENTAGE DISTRIBUTION OF HEALTH EXPENDITURES, PUBLIC AND PRIVATE, BY CATEGORY, SELECTED YEARS, 1960-87

Year	Hospitals	Other institutions	Physicians	Dentists	Other professional services	Drugs and appliances	All other health costs	Total
1960	37.9	5.7	16.6	5.1	2.3	14.2	18.2	100.0
1965	42.7	6.1	16.0	4.7	1.9	13.3	15.3	100.0
1970	45.0	7.2	16.6	4.2	1.5	12.5	13.0	100.0
1975	44.4	9.7	15.7	4.9	1.1	10.7	13.5	100.0
1980	40.9	11.6	15.2	5.8	1.1	10.8	14.6	100.0
1981	41.2	11.4	15.0	5.6	1.2	11.0	14.6	100.0
1982	41.9	11.4	14.9	5.5	1.2	10.7	14.4	100.0
1983	41.7	11.2	15.4	5.3	1.3	11.1	14.0	100.0
1984	41.0	10.8	15.6	5.3	1.2	12.0	14.1	100.0
1985	40.2	10.5	15.7	5.5	1.3	12.8	14.0	100.0
1986	39.6	10.3	15.8	5.5	1.2	13.4	14.2	100.0
1987	39.2	10.3	16.0	5.4	1.4	13.9	13.8	100.0

4.12 GOVERNMENTAL HEALTH EXPENDITURES, FEDERAL, PROVINCIAL AND LOCAL, SELECTED YEARS, 1960-87

Year	Expenditures $'000,000	Annual percentage increase	Percentage of GNP	Per capita $	Percentage of total national health expenditures
1960	915	—	2.4	51	42.7
1965	1,779	14.2	3.1	90	52.1
1970	4,389	19.8	5.0	206	70.2
1975[r]	9,371	16.4	5.5	412	76.4
1980[r]	16,967	12.6	5.6	705	74.7
1981[r]	20,139	18.7	5.8	827	75.6
1982[r]	23,633	17.3	6.5	961	75.9
1983[r]	26,247	11.1	6.7	1,058	76.1
1984	28,072	7.0	6.5	1,123	75.2
1985	30,182	6.5	6.5	1,199	74.7
1986	32,948	9.2	6.8	1,299	74.4
1987[p]	35,567	7.9	6.7	1,387	74.2

4.13 TOTAL NATIONAL HEALTH EXPENDITURES, PUBLIC AND PRIVATE, BY PROVINCE AND CATEGORY, 1986 AND 1987^p (MILLION DOLLARS)

Category	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta	BC	YT and NWT	Total
1986[1]												
Hospitals	375	73	648	470	4,815	6,161	742	580	1,770	1,814	71	17,518
Other institutions	97	29	84	124	1,255	1,596	232	337	312	470	5	4,550
Physicians	90	23	190	134	1,476	3,026	223	206	644	950	19	6,981
Dentists	20	8	66	35	399	1,052	90	78	277	391	2	2,418
Other professional services	3	1	5	5	98	270	19	20	75	82	1	579
Drugs and appliances	94	24	279	150	1,338	2,455	244	232	498	610	8	5,931
All other health costs	103	18	157	142	1,403	2,150	346	350	820	740	77	6,309
Total expenditures	782	176	1,439	1,060	10,784	16,710	1,896	1,803	4,396	5,057	183	44,286
Per capita ($)	1,377	1,393	1,647	1,491	1,648	1,831	1,770	1,783	1,852	1,748	2,589	1,745
1987[1]												
Hospitals	398	77	682	498	5,222	6,666	800	602	1,808	1,972	85	18,809
Other institutions	105	32	99	126	1,354	1,766	247	372	333	506	7	4,946
Physicians	100	25	203	143	1,586	3,480	238	213	662	1,007	21	7,679
Dentists	23	8	68	39	431	1,140	97	78	305	419	3	2,610
Other professional services	5	1	6	6	108	309	22	21	78	88	1	644
Drugs and appliances	106	27	319	174	1,493	2,770	270	254	556	678	9	6,656
All other health costs	100	25	180	155	1,483	2,289	325	361	791	806	73	6,591
Total expenditures	837	195	1,557	1,141	11,677	18,420	1,999	1,901	4,533	5,476	199	47,935
Per capita ($)	1,473	1,534	1,772	1,601	1,770	1,985	1,852	1,871	1,906	1,869	2,816	1,869

[1] *Calendar year.*

4.14 NUMBER OF REPORTING HOSPITALS, 1988-89

Type of hospital	Province or territory											
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	NWT	Canada
Public	36	8	49	35	188	226	85	122	145	102	11	1,007
General	27	7	44	32	112	187	77	121	117	82	5	811
Specialty	1	—	3	—	10	9	2	—	3	3	—	31
Rehabilitation (including convalescence)	—	—	1	1	8	6	—	—	1	3	—	20
Extended care (including chronic care)	—	1	—	—	45	24	2	1	22	14	—	109
Psychiatric (long-term)	1	—	1	2	13	—	—	—	2	—	—	19
Nursing station, outpost and other	7	—	—	—	—	—	4	—	—	—	6	17
Proprietary	—	—	—	—	33	12	—	—	—	—	—	45
Federal[1]	—	—	1	—	2	1	16	1	1	1	—	27
Total, all hospitals[1]	36	8	50	35	223	239	101	123	146	103	11	1,079

[1] *Includes Yukon which has four federal hospitals.*

4.15 OPERATING EXPENSE PER PATIENT-DAY, FOR REPORTING PUBLIC HOSPITALS[1], BY TYPE OF HOSPITAL, 1987-88 (DOLLARS)

Province or territory	General	Specialty[2]	Rehabilitation[3]	Extended care[4]	Psychiatric (long-term)	Nursing station, outpost and other	Total
Newfoundland	489.03	680.80	—	—	208.99	3,189.10	454.17
Prince Edward Island	324.75	—	—	128.37	—	—	306.80
Nova Scotia	449.34	483.77	523.06	—	372.93	—	453.61
New Brunswick	392.59	—	393.98	—	176.73	—	358.10
Quebec	395.38	549.05	210.40	143.94	161.83	—	310.77
Ontario	454.27	992.73	324.51	207.33	—	—	436.82
Manitoba	484.87	511.46	—	251.15	—	—	464.77
Saskatchewan	320.28	—	—	237.65	—	—	316.32
Alberta	454.53	1,460.26	466.89	124.56	254.97	—	384.84
British Columbia	324.66	1,308.08	364.53	122.90	—	—	322.02
Northwest Territories	966.18	—	—	—	—	—	966.18
Canada	416.29	782.62	285.79	160.30	174.30	3,189.10	372.73

[1] *Excludes data for federal and private hospitals.*
[2] *Includes pediatric, psychiatric short-term and other special hospitals.*
[3] *Includes convalescence.*
[4] *Includes chronic care.*

4.16 TOTAL OPERATING EXPENSE FOR REPORTING PUBLIC HOSPITALS[1], BY TYPE OF EXPENSE, 1988-89 (THOUSAND DOLLARS)

Province or territory[2]	Gross salaries and wages	Medical and surgical supplies	Drugs	Employee benefits	Supplies and other expenses	Total
Newfoundland	264,863	17,475	12,238	29,840	83,251	407,668
Prince Edward Island	43,901	3,044	2,213	4,688	12,899	66,745
Nova Scotia	461,180	34,932	25,164	41,741	148,112	711,129
New Brunswick	348,653	26,924	16,952	33,834	99,605	525,968
Quebec	3,420,298	169,289	151,002	363,366	917,234	5,021,189
Ontario	4,449,951	294,739	232,684	402,553	1,334,091	6,714,018
Manitoba	494,481	30,976	23,046	49,616	183,738	781,858
Saskatchewan	380,163	26,917	18,563	35,805	116,758	578,206
Alberta	1,263,325	79,396	62,160	138,191	387,848	1,930,919
British Columbia	1,215,312	88,166	62,551	174,717	263,165	1,803,911
Northwest Territories	22,013	686	493	6,678	8,964	38,834
Total	12,364,139	772,544	607,065	1,281,031	3,555,666	18,580,445

[1] *Excludes data from federal and private hospitals.*

[2] *All four hospitals in Yukon are federal*

Sources

Health and Welfare Canada.

Statistics Canada.

Mines and Resources/National Archives of Canada/C-3862

Chapter 5

EDUCATION

5.1 INTRODUCTION

UNTIL THE LATE 1940s, Canada was, according to a report by the Organization for Economic Co-operation and Development, "one of the less educationally developed of the great democracies". However, following World War II, Canada's enrolment increased faster than that of any other industrialized country, spurred by unprecedented population growth combined with the desire of increasing numbers of students to continue to higher levels.

This growth continued unabated until the end of the 1960s. While population increased and the economy was buoyant, community colleges and elementary and secondary schools were built, and universities expanded their facilities and introduced new programs to meet growing student demand.

In the early 1970s, elementary enrolment began dropping, however, with the decline of the birth rate. This created a ripple effect: by the mid-70s, secondary enrolment was decreasing, and the rate of increase in postsecondary education was slowing. In the 1980s, the declining birth rate combined with an economic slowdown led to restraint in education spending. However, education continues to be among the nation's chief expenditures, accounting for about 7% of GDP, 8% of personal income, $1,622 per capita by total population, and $3,200 per capita by the number of Canadians in the labour force. Provincial and municipal governments provide the major share of education funding.

The following overview presents some key characteristics of Canada's current educational status.

G Hunter/National Archives of Canada/PA 166277

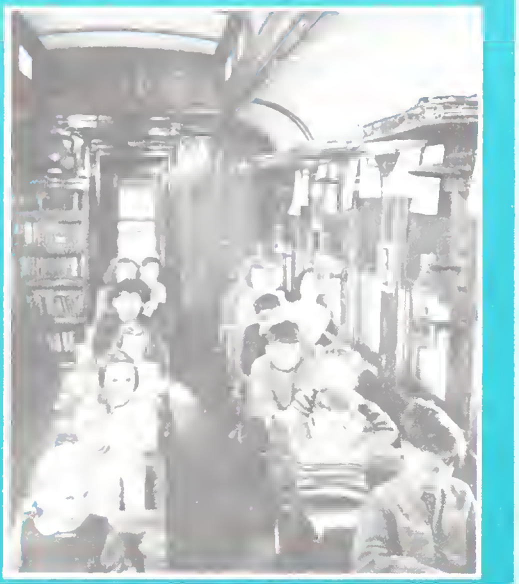
EDUCATION OVERVIEW

In 1986, Canadians had a median of 12.2 years of schooling, up from 10.6 in 1971. (The median for males and females was virtually identical.) Most adults (82%) had completed at least Grade 9 education; a high proportion of the 18% who had not were over 55 years of age. Almost half (45%) of the population aged 20 years and over had graduated from secondary school.

In 1989, over 5 million students were enrolled in elementary and secondary schools. This was a 14% drop from the all-time high of 5.8 million in 1970-71. In the late 1970s, enrolment declined at an average annual rate of around 2%. From 1982-83 to 1985-86, this dropped to an annual average decline of 0.5%. The first increase in over a decade and a half occurred in 1986-87 (0.2%), followed by smaller increases in the next two years.

Full-time postsecondary enrolment increased throughout the 1970s and early 1980s while enrolment at lower levels declined. Total full-time postsecondary enrolment reached 817,000 in 1988-89, a 32% increase from 10 years earlier. Growth was slow in the late 1970s, averaging just over 1% a year. At the beginning of the 1980s, enrolment increased more than 5% each year, but by mid-decade, annual increases had dropped to less than 1%.

About six out of 10 full-time postsecondary students are enrolled in universities; the rest attend community colleges. In 1979-80, full-time university enrolment began to increase after two



H. Wright Corp./National Archives of Canada/PA-142372

In the 1930s, roving CP train cars like this one travelled to outlying areas so children could attend school.

HOW WELL WE READ AND WRITE: LITERACY IN CANADA

Canada's recent literacy survey found 62% of Canadian adults have the skills to handle most reading tasks they come across in everyday life, in at least one of Canada's two official languages. Another 22%, or 4 million, have little trouble reading as long as the subject is reasonably familiar and is laid out clearly and simply. However, the reading skills of 16% of all adults, or about 2.9 million people, are too limited to allow them to deal with most everyday written material. And of those, 2%, or about 320,000 people, reported having no skills in either English or French.

Statistics Canada defines literacy as the skill to use everyday printed material at home, at work, and in the community. The survey, published during International Literacy Year in 1990, was based on common activities in Canadian life, and studied 9,500 people from the ages of 16 to 69 years. The reading survey grouped them from Level 1, or lowest, to Level 4 or highest, based on the way they handled test items.

Level 1 accounted for 7% of Canadians and included those who have difficulty dealing with printed materials. Those in Level 1 most likely identify themselves as people who cannot read.

Level 2 accounted for 9%. Canadians at this level could use printed materials for limited purposes only, such as finding a familiar word in a simple text. They also would likely recognize themselves as having difficulties with common reading materials.

Level 3 accounted for 22%. Canadians at this level could use reading materials in a variety of situations, provided the material was simple, clearly laid out and the tasks involved were uncomplicated. These people generally do not see themselves as having significant reading difficulties, but they do tend to avoid situations requiring reading.

The bulk of those surveyed, 62%, fell into Level 4, consisting of people who could meet most everyday reading demands. This group is diverse, and shows a wide range of reading skills within the level.

The survey found a strong relationship between completing high school and everyday reading skills. Only 8% of Canadians whose education ended with high school graduation are at Levels 1 and 2, while 70% are at Level 4. By contrast, 60% of Canadians with only elementary schooling or none, had very limited reading skills and fell into Levels 1 and 2.

On the whole, sex is not a factor in literacy — Canadian men and women have the same reading abilities. However, age is a factor, with higher everyday reading skills found among younger people. Close to three in four Canadians aged 16 to 34 read at Level 4 standards, but among the 55 to 69 year old population, the proportion is only one in three.

There was also a relationship found between reading ability and income. Only 54% of adults with a reported income of between zero and $10,000 are in Level 4, while the percentage jumps to 82% for those with incomes of $40,000 or greater.

And reading skills appeared to be stronger in Western Canada. A full 69% or more of Saskatchewan, Alberta and British Columbia's populations could read at Level 4 standards. By contrast, Newfoundland, with almost a quarter of its adult population at Levels 1 and 2, and 36% at Level 3, registered the lowest estimated reading skill levels in the country.

Between the two extremes, Nova Scotia, New Brunswick and Quebec results showed between 15% and 20% of their adult populations at Levels 1 and 2 and close to 57% at Level 4. Ontario and Manitoba results showed 62% and 65%, respectively, of their population had Level 4 reading skills.

The survey also measured writing and numeracy skills of Canadians. Numeracy skills, or the ability to deal with number-related tasks on everyday forms, were found to be fairly closely related to functional reading skills. The survey on writing ability found 88% of Canadian adults can write a simple message — a note explaining how to turn on an oven — that included all the information testers asked for. Some 62% could write an understandable letter asking for an appliance to be repaired. However, the writing skills of an estimated 11% of the population, or about 2 million adults, could not be measured in the writing survey, either because they were not skilled enough in English or French, or because they refused to complete one or both of the writing tests.

years of decline. The following year, the previous high reached in 1976-77 was surpassed; for the rest of the decade, enrolment continued to rise. The 1988-89 total of 306,192 was a 36% increase from the 1978-79 total.

Full-time postsecondary students in community colleges totalled 317,700 in 1988-89, up 27% from 1978-79, but down slightly from the high of 322,300 reached in 1985-86. Although growth was steady during the first half of the 1980s, slight decreases have occurred in each subsequent year.

In 1988-89, there were nearly 282,000 full-time elementary-secondary teachers, a 1% decrease from the high of 284,900 in 1976-77. With the exception of one year, the elementary-secondary teaching force declined annually from 1976-77 to 1985-86. From 1986-87 to 1988-89, there was a 5.5% increase.

Teaching staffs at universities and community colleges have increased steadily in recent decades. In 1988-89, there were 36,300 full-time university teachers, and full-time community college faculty teaching at the postsecondary level totalled 25,300.

HISTORICAL PERSPECTIVE

The earliest organized forms of education in the territory that was to become Canada were under church control. Soon after Quebec was founded as a colony of France in 1608, the first school opened there; but it was not until 1824 that Quebec passed an education act. Nova Scotia had already done so in 1766, followed by New Brunswick in 1802 and Ontario in 1807.

In Quebec during the 1840s and 1850s, a public education system was developed, supplemented by schools and colleges operated by Roman Catholic orders. Ontario was also establishing a public system, as were New Brunswick, Nova Scotia and Prince Edward Island. Before Confederation, higher education was conducted in private institutions, most controlled by religious authorities.

The Constitution Act, 1982, re-affirmed the provisions of the Constitution Act, 1867 (formerly called the British North America Act). This Act had placed education exclusively under the control of each province, essentially ratifying systems that already existed in Ontario, Quebec, New Brunswick and Nova Scotia. Provinces admitted to Confederation in subsequent years (Manitoba in 1870, British Columbia in 1871, Prince Edward Island in 1873, Saskatchewan and Alberta in 1905, and Newfoundland in 1949) were able to establish their own education systems.

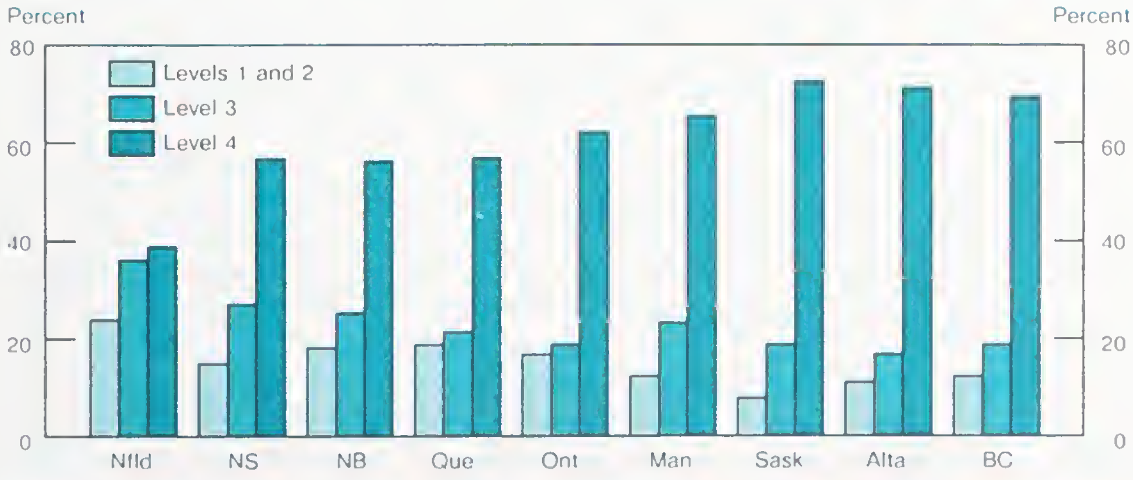
Consequently, age of compulsory attendance, courses offered and graduation prerequisites vary somewhat among the provinces. However, each province's education system consists of three levels: elementary, secondary and postsecondary.

From 1951 to 1971, elementary-secondary enrolment more than doubled. The fastest growth came in the 1960s, with elementary-secondary enrolment rising 40% and postsecondary enrolment rising 170%. The peak year for overall enrolment was 1970-71.

In the 1960s, education expenditures grew an annual average of more than 15%, reaching $7.7 billion in 1970. These expenditures were equivalent to nearly 8% of GDP and absorbed 22% of government spending, more than for any other area.

Chart 5.1

LITERACY LEVELS BY PROVINCE [1], (ages 16 to 69), 1989



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[1] In PEI, due to small sampling size and high variability, figures were not released.

Spending on education — from kindergarten through to graduate studies — has risen steadily over the past decade, reaching an estimated $42 billion in 1988-89, an increase of 131% from 1978-79. During the same period, the Consumer Price Index rose by 95%. Elementary-secondary education absorbed $26.5 billion of the 1988-89 budget; university education, $8.5 billion; college, $3.5 billion; and vocational training, $3.5 billion.

5.2 SCHOOLS

ADMINISTRATION AND ORGANIZATION

Each province has a department of education headed by a minister who is a member of the provincial cabinet or, in the Yukon and Northwest Territories, a councillor.

Responsibility for teacher training has largely been transferred from teachers' colleges to universities. In fact, the Nova Scotia Teachers' College is the only remaining institution of its kind in Canada.

Schools in all provinces are established under a public school act and are operated by local authorities answering to the provincial government and resident ratepayers. Provincial authorities delineate school board areas and the responsibilities of the boards. With the growth of cities and towns, small local boards have been consolidated into central, regional or county units with jurisdiction over both elementary and secondary schools.

At the elementary and secondary levels, schools are classified according to the nature of control: public, private or federal. Public schools, including Protestant and Roman Catholic separate schools, are operated by local education authorities according to provincial public school acts. Private schools are operated and administered by individuals or groups. Schools for the handicapped, which provide special facilities and training, are usually administered by provincial governments. Federal schools are administered by the federal government.

One obvious difference among provincial education systems is provision for separate schools. Some provinces allow religious groups to establish schools under the authority of the education department, but they must conform to department regulations on curriculum, textbooks and teacher certification. As legal corporations, separate school boards can levy taxes and receive government grants.

About 5% of all elementary-secondary students attend schools that are run independently of the public systems. Provincial policies vary from direct operating grants to no provincial support at all.

A number of strategies have been developed to educate children with special needs or abilities — an estimated 5% to 10% of all students. These students may be accommodated in separate institutions (public or private), or in special or integrated classes in regular schools. For academically gifted students, there are enriched and accelerated programs. Schools for the blind and deaf are generally administered directly by a province, sometimes by interprovincial agreement. Many local systems provide special schools or classes for children with learning disabilities.

Although education is primarily a provincial responsibility, the federal government has assumed direct control over education beyond the bounds of provincial jurisdiction: for native people, for armed forces personnel and their families, and for inmates of federal penal institutions.

Education of registered Indian and Inuit children is the responsibility of the Department of Indian and Northern Affairs. The Minister of the Department is authorized to maintain schools for these children directly, or to provide access to public or private schools.

In 1988-89, the federal government owned and operated 116 schools on Indian reserves. In addition, native band councils managed 262 schools, with the Minister regulating curriculum, building standards and teaching.

Across Canada, about half of native children attend provincial public schools. The federal government reimburses the provinces, either by paying tuition or by contributing to the schools' capital costs.

In the Yukon and Northwest Territories, the Department of Indian and Northern Affairs co-operates with the territorial departments of education to educate native children. Counselling staff in Ottawa and Winnipeg are available to northern native students attending high school, technical school, college or university in Southern Canada.

SALARIES IN A CLASS APART

The *1867 Year Book* notes the range in annual pay for men and women teachers. In what was then Upper Canada, male teachers earned from $260 to $552 a year, while women earned between $169 and $265 a year. Wage disparities also related to the teaching locale — teachers in larger cities earned more than those in small towns or rural areas.

Today, salary differences between male and female teachers have narrowed considerably. In 1986, the average salary for a male teacher was about $39,000 and for a female teacher just over $34,500. Also, the highest teacher salaries are now found in the most remote regions of the country — the Yukon and Northwest Territories.

W.J. Topley/National Archives of Canada/PS 13012

Classroom scene, early 1900s.

For dependents of service personnel, the Department of National Defence maintains schools at military establishments in Canada and overseas. In Canada, the curriculum of these schools follows that of the province where they are located. The policy, however, is to avoid building schools when children can attend local schools. The provinces are reimbursed for the costs of armed forces' dependents in public schools.

In 1988-89, there were nine overseas schools — in Belgium, the Netherlands and the Federal Republic of Germany. To Grade 8, the curriculum in the English schools varies; Grades 9 to 13 follow the Ontario curriculum. In the French schools, all grades follow the Quebec curriculum.

Grade structure School attendance is compulsory for about 10 years in every province. The starting age is 6 or 7, and the minimum leaving age is 15 or 16. Usually, though, the elementary-secondary program extends over 12 years. In most provinces, kindergarten classes are provided in public elementary schools; in other provinces, pre-Grade 1 classes are conducted only in private schools operating under varying degrees of provincial supervision.

Levels within elementary-secondary schools vary by province. Elementary covers the first six grades in most jurisdictions; in others, Grades 7 and 8 are also considered elementary. Consequently, interprovincial variations also exist at secondary (high) schools. These schools include five or six grades, and may be further subdivided into junior high, senior high and junior-senior high schools.

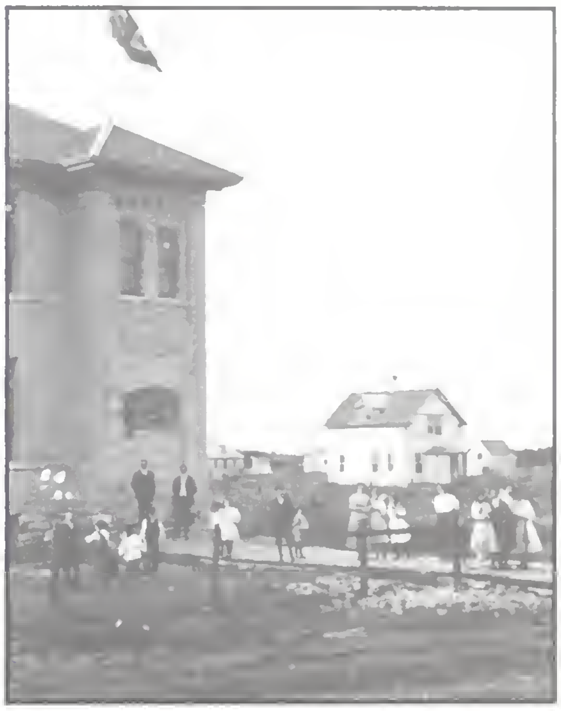
The curriculum of elementary-secondary schools also varies, although the provinces share general features. For example, from Grade 1 to the beginning of secondary school, all provinces emphasize the same basic skills in reading, writing, speaking and mathematics.

At one time, secondary schools were predominantly academic and focused on preparing students for university. Vocational schools were separate, and found only in large cities. Today, there are separate technical and commercial high schools, and most secondary schools offer a mix of purely academic courses as a prelude to university and vocational courses (from one to four years in length) that prepare students for an occupation or for further training at a community college.

Promotion by subject rather than by grade is becoming increasingly common in secondary schools, with some jurisdictions having partially or entirely eliminated age-grouped classes. Under this new system, graduation depends on accumulating a requisite number of credits.

Finance In 1988-89, expenditures on elementary-secondary schools were estimated at $26.5 billion — 63% of all education spending. Traditionally, elementary-secondary education has been partly funded by municipalities through property taxes. However, the municipal share of elementary-secondary financing dropped from 49% in 1960 to 28.6% in 1987-88. The relative contributions of local and provincial governments differ from province to province. Local school boards set budgets, and thus the taxes required. Usually, municipalities levy and collect taxes for the boards, but in some jurisdictions this is done by school boards or the provincial department of education.

Some federal support is channelled through the provinces. Direct federal expenditures cover some 3% of the elementary-secondary total, including funds spent on Indian and overseas schools. The federal government also contributes to elementary-secondary education under a federal-provincial program for the support of official languages in education.



Mines and Resources/National Archives of Canada/PA 21025

Recess at a primary school.

5.3 HIGHER EDUCATION

HISTORY

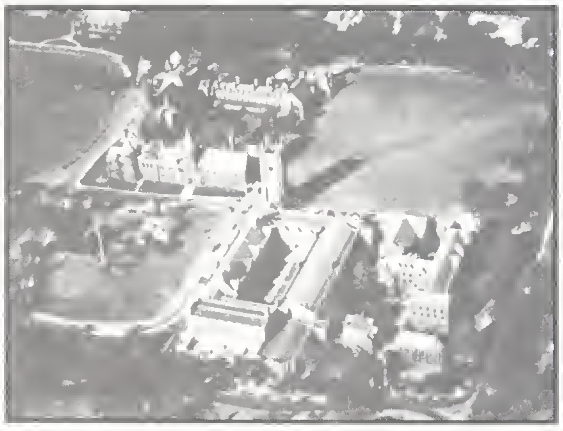
The first institutions of higher education in Canada followed European models. The Séminaire de Québec, founded in 1663, was the base upon which Université Laval was established in 1852. The oldest English-language institution, King's College in Windsor, Nova Scotia, opened in 1789.

By 1867, Quebec had three universities and 712 classical colleges. There were three universities in New Brunswick, five in Nova Scotia and seven in Ontario. In Ontario, Queen's and Victoria universities were supported by the Presbyterian and Methodist churches to train clergy and a small, select group of laymen who wished to enter the professions. Teaching concentrated on theology, philosophy, the classics, medicine and law.

HIGHER EDUCATION

Higher education has long contributed to the enrichment of Canada's social fabric. By 1867, the year of Confederation, there were 18 institutions of higher learning, most church-controlled. The country's first university—King's College in Windsor, Nova Scotia—had already been in existence since 1789. By the early 1920s, there were 22 Canadian universities and they conferred some 5,000 first and second degrees.

Today there are 69 Canadian universities and in 1989 they granted over 100,000 bachelor and first professional degrees, about 17,000 master's degrees and some 2,500 doctoral degrees.


J.H. Tudhope/National Archives of Canada/PA-117716

Aerial view of the University of Toronto, 1930.

About the middle of the 19th century, McGill University introduced courses in natural sciences, opened a normal school for elementary teachers, and pioneered instruction in applied science and engineering. Similar changes were taking place at other institutions — Dalhousie in Halifax, Queen's in Kingston, and the University of Toronto.

While English-language institutions were tending toward practical and scientific studies and secular control, French-language institutions still emphasized classical studies under clerical control.

As the four western provinces were settled, new institutions were created. The University of Manitoba was granted a charter in 1877, and provincial universities were established in Alberta in 1908 and in Saskatchewan in 1909. The University of British Columbia, although chartered in 1908, did not open until 1915. By the outbreak of World War I, Canada had a score of universities, each with a distinctive character. To the traditional faculties of theology, law and medicine, schools of engineering, agriculture, forestry, education, dentistry and home economics had been added.

By 1939, Canada had 28 universities. These varied in size from the University of Toronto, with full-time enrolment of about 7,000, to institutions with fewer than 1,000 students. The total of about 40,000 students represented 5% of the population aged 18 to 24.

Radical changes began after World War II. As a result of a veterans' rehabilitation program, 53,000 ex-soldiers entered the universities between 1944 and 1951. The immediate problem of space was solved by using temporary buildings and creating satellite colleges. By the mid-1950s, places vacated by veterans had been filled by high school graduates. Demands for university expansion continued, but the full force of this pressure came in the 1960s, when enrolment rose from 128,600 in 1960 to 323,000 in 1971-72.

In the early 1970s, growth rates slowed, despite the continued increase in the population aged 18 to 24. Part-time enrolment increased more rapidly than full-time enrolment.

POSTSECONDARY STRUCTURE

Postsecondary education can be obtained from community colleges (non-degree-granting) and universities (degree-granting). As the term "postsecondary" suggests, admission to this level is normally contingent upon graduation from secondary school. Specifically excluded from postsecondary education is trade/vocational training, although it is available in some community colleges.

One of the chief features of postsecondary education in Canada today is variety. Colleges and universities offer a wide range of programs culminating in diplomas, certificates or degrees that signify qualification for semi-professional or professional occupations.

No single provincial or federal government office has sole responsibility for postsecondary education. Each province has developed a different set of structures to govern and fund higher education.

Finance Postsecondary education in Canada is essentially government-financed. Expenditures on postsecondary education have risen from about $330.5 million in 1960 to $2.1 billion in 1970, and to an estimated $12.1 billion in 1988-89. Universities accounted for $8.5 billion, and community colleges for $3.5 billion. Federal and provincial governments contributed 83% of the total.

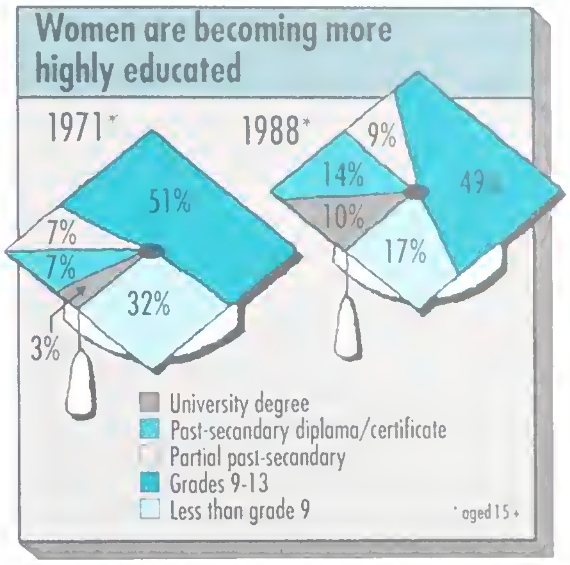
Federal involvement in postsecondary education is mainly financial. From 1951 to 1966, the federal government made direct operating grants to eligible universities and colleges, with total allotments to each province calculated on a per capita basis. In 1967, the federal government stopped paying regular operating grants directly to institutions, except for sponsored research and for four federally owned establishments. Instead, under the Federal-Provincial Fiscal Arrangements Act, transfers were made to the provincial governments. This act was replaced in 1977 by the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act.

UNIVERSITIES AND DEGREE-GRANTING COLLEGES

Universities develop critical and creative abilities and provide a pool of highly qualified human resources. An institution that has been given the power to grant degrees is normally called a university, although it may also be called a college, institute or school. In addition to universities *per se*, the definition includes liberal arts colleges, colleges of theology, and a number of other institutions that grant degrees in specialized fields such as agriculture or fine arts. Liberal arts colleges are smaller institutions with degree programs, usually only in arts. Colleges of theology offer degrees in theology only.

Organization and administration With minor exceptions, the provinces have authorized the establishment and institutional structures of universities through legislative acts. No two Canadian universities are exactly alike, but university structure and organization are relatively standard.

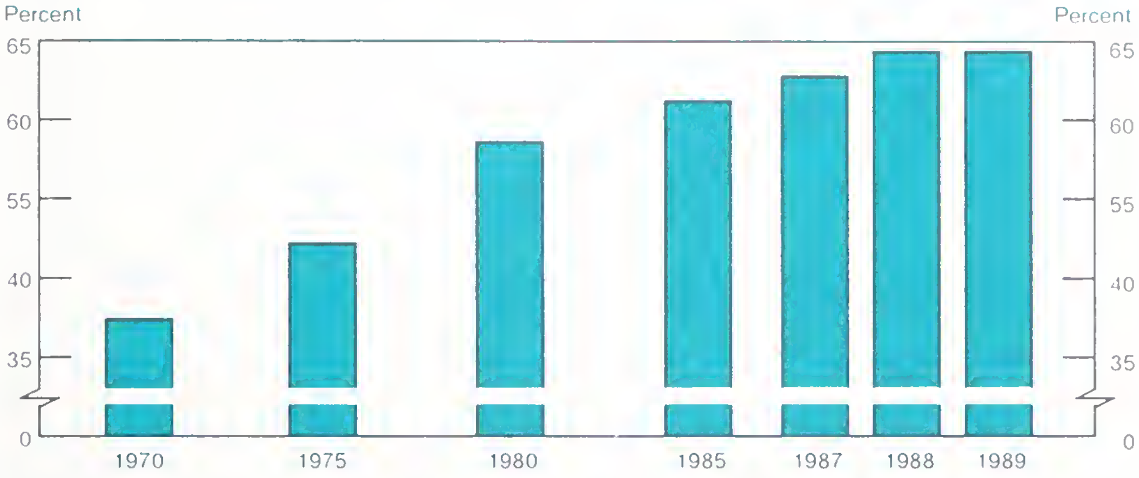
Universities are not always independent establishments — they can be associated with a parent institution in several ways. For example, in both federated and affiliated institutions, the parent university is responsible for teaching and for granting degrees in all subjects covered by the federation or affiliation agreement. A federated college or university is responsible for its own administration and can grant certain degrees. Like federated colleges, affiliated institutions are self-administered, but they have no power to grant degrees. Constituent universities and colleges represent still another organizational form. These institutions are fully incorporated into the parent universities, both administratively and academically.



Courtesy of Status of Women Canada

Chart 5.2

FEMALE UNIVERSITY GRADUATES AS A PERCENTAGE OF TOTAL GRADUATES



Reflecting the linguistic profile of the country, most Canadian universities are English-speaking. Of the seven independent French-speaking institutions, four are in Quebec; Nova Scotia, New Brunswick and Ontario each have one. In addition, two Ontario universities offer instruction in English and French. Others conduct classes in one language only, but permit students to submit term papers, examinations and theses in either language. As well, there are a number of French affiliates of English and bilingual institutions.

The vast majority of universities receive heavy financial support from the federal and provincial governments. The largest share — about 65% — comes directly from the provincial governments. Direct federal funding, mainly for research, makes up another 15%. Tuition fees cover 11.0%, and other sources cover about 9%. These figures, however, hold at the national level only. For individual institutions, government funding ranges from a nominal proportion for small, church-affiliated institutions, to over 90% for some universities.

Admission Every university, and in some instances individual faculties, set their own admission standards. Nonetheless, institutions in the same province generally maintain similar requirements, particularly for undergraduate arts and science programs. In all the provinces except Ontario and Quebec, prospective university students must complete 12 years of elementary-secondary school.

In Ontario, most universities require completion of 13 grades, although some admit a limited number of students with 12 grades, and a few offer a preliminary (qualifying) year of study in lieu of Grade 13.

Quebec students must generally obtain a diplôme d'études collégiales (DEC) granted after two years of pre-university study at a collège d'enseignement général et professionnel (CEGEP). Entry to a CEGEP comes after 11 years of elementary-secondary education.

Generally, high school graduation alone does not guarantee acceptance into a university program; specific courses and marks are usually required for entry to each faculty. Most institutions allow for the admission of "mature students" — people aged 21 and over who have been out of school for several years, and who may not meet the usual criteria.

WOMEN IN CANADIAN EDUCATION

In 1867, a woman interested in teaching algebra in New Brunswick would probably find herself leading a class in common needlework instead.

Algebra, along with land surveying, navigation, and geometry, was off limits to female teachers. Teachers were divided into first, second and third class; and although more than half the teachers in the 1870s were women, only first class male teachers were allowed to teach those subjects. Female teachers of every class could teach spelling, writing, reading, arithmetic, and of course, common needlework.

Throughout Canada's history, the majority of postsecondary teachers have been male, while most teachers working in lower levels have been female. Carrie Derick, a member of McGill's academic staff in 1891, became Canada's first female full professor in 1911. By 1920, there were 302 women teaching alongside 2,696 men in the country's 22 universities. Nine women were teaching medicine and two engineering. There were still no female law teachers.

Although the number of female professors has grown dramatically since 1920, they remain the minority in postsecondary education; particularly in the faculties of medicine, engineering and law. In 1987, universities employed many more male professors than female professors.

W.J. Topley/National Archives of Canada/PA-28095

School scene, Ontario, 1899.

Programs Basically, universities confer degrees and diplomas/certificates at two levels: undergraduate and graduate. Three kinds of degrees are offered by most universities: bachelor's (BA or BSc) and first professional; master's (MA or MSc); and doctorate (PhD).

Students in bachelor's and first professional degree programs, and those in programs leading to diplomas or certificates, are called undergraduates. Bachelor's degrees require a minimum of three years of full-time study. A distinction is often made between general (pass) and honours degrees; an honours degree is more specialized and many require an additional year.

Criteria for admission to graduate studies vary. A bachelor's degree at the honours level is usually necessary for acceptance into a master's program. Entrants to doctoral studies must have high achievement at the master's level. Professional degrees are granted in disciplines where the normal first degree is not a bachelor's — for example, Doctor of Medicine (MD).

Programs culminating in diplomas have never been a major feature of Canadian universities: most are in professional areas such as health, education, agriculture and business.

Each university provides a range of courses, but no single institution can offer all of the approximately 1,500 courses now taught across Canada.

Teaching staff Since the 1960s, the growing demand for university education has necessitated massive staff recruitment. From 1960-61 to 1988-89, the full-time university teaching force increased from about 7,000 to more than 36,000.

Four ranks of academic staff are recognized in most universities: full professor, associate professor, assistant professor, and lecturer/instructor. Appointments are usually made on the recommendation of a committee constituted for that purpose. Appointees generally must be doctoral degree-holders, but this is not always the case in applied fields.

Students In 1988-89, there were 500,000 full-time students in Canadian universities. This comprised 17.3% of the population aged 18 to 24, more than double the proportion of 1960. In addition, there were 306,000 part-time students registered in degree programs.

Tuition fees vary by province, by university, and by faculty. In all provinces except Newfoundland and Manitoba, higher fees are required of foreign students. In the early 1960s, student fees made up one-quarter of university income; with an increase in public funding, this proportion has been reduced to approximately one-tenth.

THE LITTLE RED SCHOOLHOUSE

For most Canadians, the little red school house conjures up a nostalgic image of early education in the rural parts of the country, although to modern students it may sound alternately idyllic and daunting. Often a single teacher ruled over a small classroom, heated in the winter with wood or coal burning stoves. Several grades were taught simultaneously: curricula generally featured the "Three Rs" — readin', writin' and 'rithmetic, with a smattering of geography and the sciences.

Although the one-room schoolhouse is typically associated with the 19th and early 20th centuries, it first came into existence with the arrival of French settlers in the early 17th century. The first one-room schools, called **petites écoles,** *were established by French clergy in the early 1600s.*

By the 19th century, English settlers had established a system of public schools financed from the sale of surveyed Crown lands — a concept that moved westward with settlers, from Nova Scotia through Ontario, and into the prairies.

While big eastern cities like Montreal or Toronto had large multi-room grammar schools, simple buildings were the rule in small homestead settlements. Local school boards used the materials and skills at hand, and many schools were tiny log cabins or wood sheds, although some were brick or stone. However, educators often criticized these minimal buildings, and one educator had this to say about the architecture and general ambience of these schools: "Think of an old bald red schoolhouse, when there are so many pleasing forms and colours that are just about as cheap. Think too, of the situation of many of our schoolhouses — stuck down in some low, quaggy spot, where it is impossible for children to be healthy, or up in bold relief on some barren knob, without a suitable enclosure, and without either a shade-tree or a flower-bed anywhere near. There it stands — the old red, or unpainted, shanty — reared by unwilling taxpayers. . ."

Despite this kind of official criticism, one-room schools grew steadily in number in the early 1900s as school districts proliferated in western Canada. In 1905, for example, Saskatchewan had 896 school districts; by 1915, this had increased to 3,702, many of them operating a single one-room school. The demand was so great the T. Eaton company even sold unassembled school buildings in its 1917/18 catalogue.

One-room schools became obsolete when school busing on a large scale became practical in the early 1950s. Then, small school districts were consolidated and larger buildings containing more facilities were built in central towns or cities. The system in which small groups of students stayed together throughout their school life became a thing of the past, changed by new facilities with multiple classrooms, specialized sports fields and equipment, landscaping, music, art, language labs, gymnasiums, cafeterias, industrial arts equipment — an entire world beyond the "Three Rs" of the one-room school.

For a time in the early 1900s, the little red schoolhouse was the most common public building in Canada. In some cases, it was the only public hall, turned to whatever purpose suited nearby inhabitants at the time — school, political meeting place, amateur theatre, or community dance hall. From its place in the educational system, it has made an indelible impression on Canada's literature and cultural thinking.

The Beaver/National Archives of Canada/C 2439

Scene from a one-room schoolhouse in Alberta, 1949.

Frontier College/National Archives of Canada/C 57068

School children in front of a one-room schoolhouse, Dane, Ontario, 1907.

National Film Board/National Archives of Canada/PA 48671

Off to school in Manitoba, 1920.

COMMUNITY COLLEGES

History Many of today's community colleges began as private church-sponsored colleges, public technical schools or university affiliates. In the early 1960s, new educational systems were developed to accommodate a rapidly growing population, and to satisfy the increasing need for skilled technical workers. Often on the recommendation of specially appointed commissions, the provinces created a community college system either by transforming older institutions or by founding new ones. Community colleges thus offer a range of advanced programs apart from those traditionally associated with universities.

Provincial legislation either brought these networks of community colleges into being or enabled their establishment. However, not all related institutions were transformed into community colleges and amalgamated into a province-wide network — a few continue to operate privately.

Structure Traditionally, higher education was the almost exclusive preserve of universities. Now, although universities still account for about 60% of full-time students, postsecondary education is offered in about 200 other institutions.

A community college can be defined as a public or private postsecondary institution offering semi-professional career programs or university transfer programs. These colleges may also offer some or all of the following: secondary level academic upgrading; trade/vocational courses; and other credit or non-credit programs oriented to community needs. Thus the "community college" classification includes: colleges of applied arts and technology in Ontario (CAATs); colleges of general and vocational education in Quebec (CEGEPs, an acronym from the French collèges d'enseignement général et professionnel); institutes of applied arts and sciences in Saskatchewan; technical/vocational and university-oriented colleges in British Columbia, Alberta and Yukon; institutes of technology or technical institutes; colleges of agricultural technology; and colleges providing training in other specialized fields such as art, fisheries, and marine and paramedical technologies. The Nova Scotia Teachers' College, the only institution of its kind to remain independent of the universities, is also included.

In 1964, Toronto's Ryerson Polytechnical Institute became the first non-hospital institution to train nurses. Since then, most nursing programs have been transferred from hospital schools to community colleges. However, in the Atlantic region, nurses' training is still carried out exclusively in hospital schools. These schools no longer exist in Quebec, Ontario and Saskatchewan, while in other provinces, training is still offered in hospital schools, but programs are also available in community colleges.

Organization and administration The structure of community colleges and other forms of postsecondary non-university education differs from province to province, but in all cases the provinces are partially or totally responsible for co-ordinating, regulating and financing community colleges. Financing is derived substantially, if not completely, from the provincial and federal governments, the latter through transfer payments. Some provinces finance their community colleges completely, while others do so in part. Similarly, the autonomy of colleges varies.

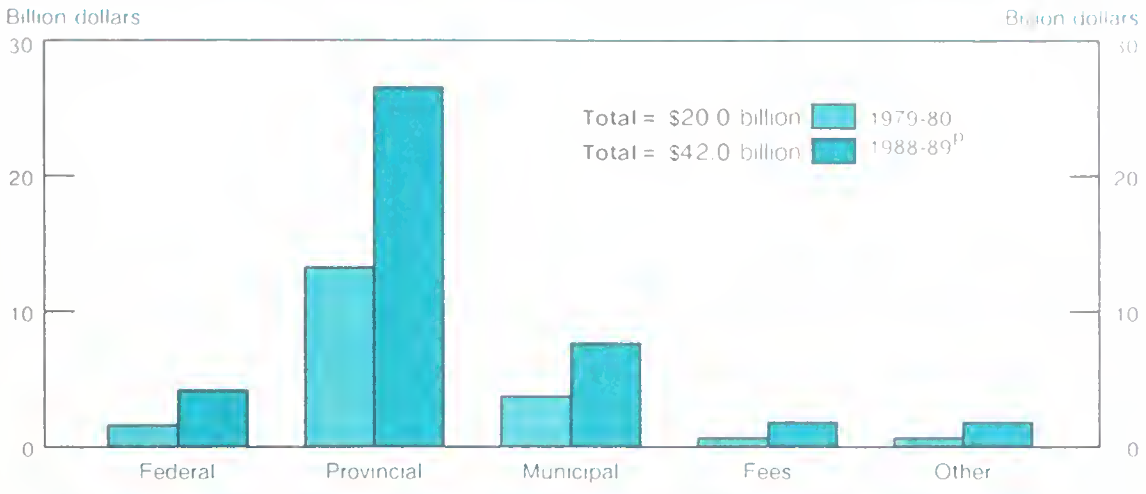
Admission Community colleges operate on the premise that educational opportunities should be available to a broad segment of society, and thus their admission criteria are flexible. Secondary school graduation is usually required, but may be waived for mature applicants. Qualifying programs are also offered to help students attain the appropriate academic level.

Programs Typically, a community college offers a wide range of programs, not all of which are at the postsecondary level. For example, the curriculum may provide trades' training, basic upgrading and remedial courses, and programs for personal and community enrichment. The postsecondary programs most commonly offered are career/technical and university transfer.

Career/technical programs usually require high school graduation for admission. They prepare students for direct entry into the labour force at a technical, mid-managerial or professional assistant level in fields such as engineering, health sciences, business, social service, and public safety. Programs last from one to four years.

Chart 5.3

DIRECT SOURCES OF FUNDS FOR EDUCATION AT ALL LEVELS



p Preliminary.

University transfer programs consist of one or two years of instruction providing students with standing equivalent to first or second year university. Transfer arrangements are established either between individual colleges and universities, or provincially.

Because one of the primary objectives of community colleges is to make education accessible to as many people as possible, courses may be offered on- or off-campus, during the day or evening and on a semester, trimester or quarter basis. Most colleges operate year-round.

Educational staff Community colleges emphasize instruction rather than research, and faculty tend to have heavy teaching loads. Career program instructors in particular tend to be oriented toward practical rather than theoretical expertise, and are often hired on the basis of their background in business, industry or trade.

In 1964-65, the number of full-time teachers at the postsecondary level in community colleges was estimated at 4,900; by 1988-89, this total had risen to 25,300.

Students Total full-time enrolment at the postsecondary level in community colleges was 317,700 in 1988-89, a 27% increase from a decade earlier, but down slightly from the all-time high of 322,300 reached in 1985-86. Nearly 70% of the students were in career/technical programs; the other 30% were in university transfer programs.

5.4 VOCATIONAL TRAINING

HISTORY

The federal government's involvement in training, particularly in the institutional aspects, dates back to the early years of this century, when rapid industrialization gave added importance to technical skills. Because public schools and universities rarely offered such instruction, this was one of the first areas of education in which the federal government became involved.

Initially, federal involvement was mostly financial. In co-operation with several provinces, an agricultural training program was set up in 1913. In 1919, under the Technical Education Act, the federal government began to support provincial programs, but few provinces were ready to participate.

By World War II, enough programs had been instituted to warrant appointment of a national council of federal, provincial and public representatives to advise the Labour Minister on vocational education. At that time, most vocational institutions were administered by provincial government departments such as labour, agriculture, commerce and industry.

During the 1950s, a shortage of technical manpower prompted the federal government to give the provinces more aid for vocational training. By 1960, about 30 technical institutes had been opened. The 1960 Technical and Vocational Training Assistance Act encouraged the

W. J. Topley/National Archives of Canada/PA 42227

Cooking class, Ladies College, Ottawa, Ontario, 1906.

provinces to extend and improve facilities. Thereafter, comprehensive schools frequently incorporated vocational programs. Federal participation increased with adoption of the 1967 Adult Occupational Training Act, which led to funding of courses given in various types of provincial institutions.

The National Training Program, established in 1982, was a partnership with the provinces and territories, and was administered through Canada Employment Centres across the country. This program supported training for skills in high demand in the labour market by funding courses at community colleges and vocational schools, through a shared-cost incentive training program with employers, and through a fund to create or improve training facilities.

In 1985, the federal government revamped its approach to training with the Canadian Jobs Strategy, designed to increase job security for Canadians and to contribute to economic growth. A co-operative effort involving the provinces, business, labour and community groups, the Strategy comprises six programs, four of which focus on training. These programs help: workers whose jobs are threatened by technology and changing economic conditions; women and young people entering the labour market; the long-term unemployed; and employers who need workers with specialized training.

The federal Vocational Rehabilitation for Disabled Persons Act facilitates trades training for the handicapped. The federal government reimburses the provinces for 50% of costs for programs that enable disabled people to support themselves fully or partially. The provinces provide training directly in community colleges and trade schools, or purchase it from the private sector or voluntary agencies.

TRADE/VOCATIONAL EDUCATION

Postsecondary education is not the only option available to Canadians; many institutions offer short-term training in practical skills with immediate labour market applicability. Trade/vocational training makes the school-to-work transition easier for young people, and ensures that workers in mid-career have access to new skills and new job opportunities.

Trade/vocational education refers to programs that lead to occupations not at the professional or semi-professional levels. Emphasis is on performing well-defined procedures with varying degrees of complexity and responsibility, rather than on applying ideas and principles. A relatively short period of instruction prepares students for specific trades or occupations.

Trade/vocational training is offered in both public and private institutions, including community colleges, public trade schools and vocational centres. It may also take place on the job, in apprenticeship programs or in industry training programs.

Programs and institutions Most trade/vocational programs can be completed in less than a year, and some last only a few weeks.

Trade/vocational training is often offered by community colleges, or by schools for specific occupations such as forestry, police and firefighting. Nursing assistant (nurses' aide) programs are offered in public trade schools, hospital schools and nursing assistant schools.

Depending on the province and the trade, admission standards range from Grade 8 to Grade 12. Students must also meet compulsory age requirements.

In Quebec, trade/vocational training is based on the province's definition of an adult student. "La loi sur la formation professionnelle des adultes" defines adult students as people 16 and older who have not attended school for at least 12 consecutive months.

A number of institutions offer academic upgrading to raise trainees' general level of education. Courses can qualify students for admission to higher academic studies or to vocational training. However, completing levels corresponding to secondary school does not give high school graduation status.

Some training is offered at work. On-the-job training can be offered to new employees, or to current employees taking on new responsibilities.

Apprenticeship programs combine on-the-job training with classroom instruction. Individuals contract with an employer to learn a skilled trade, eventually reaching journeyman status. Apprentices are often registered with a provincial or territorial labour or human resources department. The department sets standards for journeyman qualification, including: minimum age, education, and wages; duration of apprenticeship; and the ratio of apprentices to journeymen. Non-registered apprentices enter into a private agreement with an employer, often in association with a labour union, and are not subject to regulations established by the provincial department for that trade.

In co-operation with the provinces, the federal government has introduced standard interprovincial examinations to promote the mobility of journeymen. Those who pass examinations in certain apprenticeable trades have an interprovincial seal attached to their certificate, allowing them to work in any province.

Business and industrial establishments train new employees, and retrain or upgrade the qualifications of experienced workers. Publicly supported in full or in part, or entirely financed by the company, training can be on-the-job, classroom instruction, or a combination of the two.

5.5 CONTINUING EDUCATION

HISTORY

School boards and provincial departments of education have offered evening classes for adults since the turn of the century, but after World War II, these programs expanded rapidly.

Some universities have had extension programs for many years — for example, agricultural extension in Alberta and Saskatchewan, and fishermen's co-operatives at St. Francis Xavier University in Nova Scotia. Several urban universities in Central Canada developed cultural and recreational courses. Some of these courses were for academic credit, others were not. Many were offered only on campus, but others could be taken off-campus as well.

STRUCTURE

Continuing or adult education is adapted to the needs of people not in the regular system. It is given by school boards, provincial departments of education, community colleges and universities. Programs are also conducted or sponsored by non-profit organizations, professional associations, government departments, and business and industry. Instruction is not centred exclusively around institutions; it is also available by correspondence, from travelling libraries, and over radio and television.

COURSES

Continuing education programs offer both credit and non-credit courses. Credit courses sponsored by school boards and departments of education may be applied toward a high school diploma. These academic and vocational courses can be acquired through evening classes or correspondence study. Postsecondary continuing education credit courses count toward a degree, diploma or certificate.

Non-credit courses cover arts and crafts, social education (health and family life), sports and games, investment and driver education. Professional development and refresher courses are also available.

5.6 FEDERAL INVOLVEMENT

DEPARTMENT OF NATIONAL DEFENCE

The Department of National Defence trains members of the armed forces, and is also responsible for schooling children of service personnel living in government quarters. The department also finances and operates three tuition-free colleges: the Royal Military College of Canada (RMC) in Kingston, Ontario; Royal Roads Military College (RRMC) in Victoria, British Columbia; and the Collège militaire royal (CMR) de Saint-Jean in Saint-Jean, Quebec. These institutions educate and train officer cadets and commissioned officers for careers in the Canadian forces.

RMC was founded in 1876 and accorded degree-granting status in 1959. The college accepts high school graduates for four-year degree programs in arts, engineering and science, and also offers graduate programs in selected disciplines.

RRMC was established in 1942 as a naval cadet college. It became a Canadian services college in 1948, and was accorded degree-granting status in 1975. RRMC accepts high school graduates into arts, science and engineering programs, and offers degrees in physics and oceanography, physics and computer science, general science, and military and strategic studies. Engineering students transfer to RMC after second year.

CMR was established in 1952, and from 1969 to 1985 was affiliated with l'Université de Sherbrooke, which conferred degrees on CMR graduates. In 1985, the province of Quebec accorded degree-granting status to CMR. The college offers degree programs in arts, science, administration and computer science. After third year, officer cadets go to RMC for engineering or to RRMC for specialized programs.

INDIRECT PARTICIPATION

The growth of education, both in size and importance, made it inevitable that the federal government would play a role in its development, although the constitution restricts direct participation. Many federal departments provide financial support for education, offering funds for postsecondary and minority language education, citizenship and language instruction for immigrants, and human resources training programs.

Department of the Secretary of State In 1963, the education support branch of the Department of the Secretary of State was established to assist the Secretary of State in advising the Cabinet on postsecondary education. In 1967, the branch became responsible for administering cash payments for postsecondary education under the Federal-Provincial Fiscal Arrangements Act. By 1973, the branch's mandate had been enlarged to include co-ordinating the development, implementation and review of all federal policies and programs on education. This entailed communicating with provincial governments, the academic community and national organizations, and co-operating with the Department of External Affairs to co-ordinate Canada's international efforts.

The branch administers cash payments for postsecondary education. In addition, it took over the Canada Student Loans Program from the Department of Finance in 1977. Established in 1964 under the Canada Student Loans Act, this Program guarantees loans to students whose resources are insufficient, helping them to pay for full- or part-time postsecondary studies.

Applications for loans are assessed by provincial governments. Federal and provincial officials meet regularly to ensure that all applicants are treated equitably.

These loans, negotiated by students at banks or other financial institutions designated by the Department of the Secretary of State, are guaranteed by the federal government. The government pays interest on the loans while borrowers are enroled in full-time studies, and for six months afterwards. There is no interest subsidy on loans to part-time students. Under a special interest relief program, introduced in 1983, an additional interest-free period of up to 18 months may be granted to individuals who are unemployed or temporarily incapacitated. Students make repayment arrangements with the financial institution. Under the Act, the federal government provides alternative payments to Quebec and the Northwest Territories, which operate separate assistance programs. All other provinces complement the federal program with various student assistance programs of their own.

Official languages in education Canada's Official Languages Program offers minority official language communities the opportunity to be educated in their own language, and offers all Canadians the chance to learn a second official language.

The program began in 1970 and is administered by the Official Languages in Education Branch of Secretary of State. Financial assistance falls within the following principal expenditure categories: infrastructure, to support existing programs and activities through per-student contributions or special bilateral arrangements; expansion of existing programs and development of new ones, on a cost-sharing basis; teacher training and development through individual bursaries funded entirely by the federal government, and other training activities on a cost-sharing basis; and student support through individual bursaries funded entirely by the federal government, or through extra-curricular activities, such as student exchanges and summer camps, usually funded on a cost-sharing basis.

In November 1988, the Secretary of State and the Council of Ministers of Education, Canada (CMEC), signed a five-year (1988-89 to 1992-93) Protocol for Agreements on minority-language education and second-language instruction. Covering all the provinces and both territories, the Protocol focuses on expansion of: education services in the language of the minority; French-language education services at the postsecondary level; teacher training; second-language core programs; and French immersion programs. In 1989-90, federal expenditures in these areas was $246 million.

Sources

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Statistics Canada.

FOR FURTHER READING

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- *Education in Canada, a Statistical Review*, annual. 81-229
- *Teachers in Universities*, annual. 81-241
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TABLES

LEGEND

.. *not available*
... *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*

e estimate
p preliminary
r revised

(Certain tables may not add due to rounding.)

5.1 ENROLMENT IN ELEMENTARY AND SECONDARY SCHOOLS, 1983-84 TO 1988-89

Type of institution and year	Province or territory						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Public							
1983-84	147,603	25,480	177,240	146,045	1,066,133	1,773,478	199,743
1984-85	145,148	25,192	175,168	143,416	1,056,445	1,759,451	199,474
1985-86	142,332	24,996	172,614	141,332	1,041,439	1,769,074	198,937
1986-87	139,378	24,884	170,868	139,465	1,037,174	1,791,919	199,037
1987-88	136,228	24,747	169,478	138,531	1,036,180	1,825,279	199,389
1988-89	132,995	24,814	167,596	136,528	1,035,152	1,864,705	198,788
Private							
1983-84	339	40	1,758	1,146	90,660	83,643	9,159
1984-85	347	49	1,822	1,208	93,400	86,791	9,222
1985-86	319	58	1,959	1,171	95,303	76,312	9,512
1986-87	324	68	1,923	1,099	97,183	66,279	9,726
1987-88	322	74	1,998	1,004	97,702	61,878	10,009
1988-89	299	76	1,914	951	99,191	63,103	10,002
Federal[1]							
1983-84	—	36	890	732	3,211	7,562	10,205
1984-85	—	34	904	725	3,510	7,545	10,461
1985-86	—	36	914	742	3,698	7,880	10,315
1986-87	—	37	918	786	3,894	7,917	10,301
1987-88	—	32	958	818	4,088	8,294	10,670
1988-89	—	33	957	790	4,045	8,425	10,976
Schools for the blind and the deaf							
1983-84	110	15	619	—	728	975	169
1984-85	111	20	615	—	680	896	168
1985-86	106	17	591	—	718	891	140
1986-87	119	15	599	—	728	785	120
1987-88	125	19	525	—	695	802	124
1988-89	126	14	524	—	694	789	112
Total							
1983-84	148,052	25,571	180,507	147,923	1,160,732	1,865,658	219,276
1984-85	145,606	25,295	178,509	145,349	1,154,035	1,854,683	219,325
1985-86	142,757	25,107	176,078	143,245	1,141,158	1,854,157	218,904
1986-87	139,821	25,004	174,308	141,350	1,138,979	1,866,900	219,184
1987-88	136,675	24,872	172,959	140,353	1,138,665	1,896,253	220,192
1988-89	133,420	24,937	170,991	138,269	1,139,082	1,937,022	219,878

5.1 ENROLMENT IN ELEMENTARY AND SECONDARY SCHOOLS, 1983-84 TO 1988-89 (concluded)

Type of institution and year	Province or territory					
	Sask.	Alta.	BC	YT	NWT	Canada[1]
Public						
1983-84	201,130	448,835	497,312	4,548	12,901	4,700,448
1984-85	201,892	446,475	491,264	4,697	13,224	4,661,846
1985-86	202,560	448,339	486,777	4,554	13,444	4,646,398
1986-87	202,788	451,419	486,299	4,805	13,296	4,661,332
1987-88	203,499	452,879	491,309	4,896	13,386	4,695,801
1988-89	202,493	461,176	500,088	5,006	13,449	4,742,790
Private						
1983-84	2,636	11,361	29,118	—	—	229,860
1984-85	2,789	12,462	30,326	—	—	238,416
1985-86	2,943	13,058	33,553	—	—	234,188
1986-87	3,049	14,286	34,242	—	—	228,179
1987-88	3,053	14,354	36,724	—	—	227,118
1988-89	3,045	14,464	37,731	—	—	230,776
Federal[1]						
1983-84	7,986	4,902	3,079	—	—	41,606
1984-85	8,408	5,206	3,243	—	—	43,022
1985-86	8,330	5,575	3,421	—	—	44,408
1986-87	8,614	5,718	4,033	—	—	45,805
1987-88	8,711	6,082	4,098	—	—	47,384
1988-89	9,013	5,939	4,100	—	—	48,036
Schools for the blind and the deaf						
1983-84	112	138	140	—	—	3,006
1984-85	105	136	127	—	—	2,858
1985-86	96	123	130	—	—	2,812
1986-87	79	107	123	—	—	2,675
1987-88	71	106	113	—	—	2,580
1988-89	57	95	104	—	—	2,515
Total						
1983-84	211,864	465,236	529,649	4,548	12,901	4,974,920
1984-85	213,194	464,279	524,960	4,697	13,224	4,946,142
1985-86	213,929	467,095	523,881	4,554	13,444	4,927,806
1986-87	214,530	471,530	524,697	4,805	13,296	4,937,991
1987-88	215,334	473,421	532,244	4,896	13,386	4,972,883
1988-89	214,608	481,674	542,023	5,006	13,449	5,024,117

[1] *Canada total also includes Department of National Defence schools overseas.*

5.2 FULL-TIME POSTSECONDARY ENROLMENT IN COMMUNITY COLLEGES[1], 1985-86 TO 1988-89

Province or territory	Year	Career programs	University transfer programs	Total
Newfoundland	1985-86	2,967	—	2,967
	1986-87	2,945	—	2,945
	1987-88	3,003	—	3,003
	1988-89	3,257	—	3,257
Prince Edward Island	1985-86	959	—	959
	1986-87	1,016	—	1,016
	1987-88	907	—	907
	1988-89	981	—	981
Nova Scotia	1985-86	2,932	—	2,932
	1986-87	2,360	—	2,360
	1987-88	2,435	—	2,435
	1988-89	2,714	—	2,714
New Brunswick	1985-86	2,462	—	2,462
	1986-87	2,334	—	2,334
	1987-88	2,383	—	2,383
	1988-89	2,537	—	2,537
Quebec	1985-86	79,191	85,027	164,218
	1986-87	75,497	87,693	163,190
	1987-88	72,598	87,342	159,940
	1988-89	70,753	85,537	156,290
Ontario	1985-86	94,574	—	94,574
	1986-87	95,231	—	95,231
	1987-88	95,029	—	95,029
	1988-89	94,447	—	94,447
Manitoba	1985-86	3,762	76	3,838
	1986-87^{r}	3,627	82	3,709
	1987-88	3,748	91	3,839
	1988-89	3,718	90	3,808
Saskatchewan	1985-86	3,012	39	3,051
	1986-87^{r}	2,972	—	2,972
	1987-88	3,030	—	3,030
	1988-89	3,242	—	3,242
Alberta	1985-86	20,822	3,298	24,120
	1986-87^{r}	21,094	3,477	24,571
	1987-88	21,320	2,600	23,920
	1988-89	21,182	3,408	24,590
British Columbia	1985-86	13,312	9,616	22,928
	1986-87^{r}	13,230	9,743	22,973
	1987-88	13,356	11,278	24,634
	1988-89	13,506	11,982	25,488
Yukon	1985-86	71	17	88
	1986-87	49	14	63
	1987-88	52	48	100
	1988-89	53	98	151
Northwest Territories	1985-86	130	3	133
	1986-87	128	3	131
	1987-88	219	3	222
	1988-89	222	2	224
Canada	1985-86	224,194	98,076	322,270
	1986-87^{r}	220,483	101,012	321,495
	1987-88	218,080	101,362	319,442
	1988-89	216,612	101,117	317,729

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[1] *Includes related institutions such as hospital schools, and agricultural, arts, and other specialized colleges.*

5.3 ENROLMENT IN UNIVERSITIES, 1985-86 TO 1988-89

Province	Year	Full-time			Part-time		
		Under-graduate	Graduate	Total	Under-graduate	Graduate	Total
Newfoundland	1985-86	9,714	638	10,352	4,092	532	4,624
	1986-87	10,147	681	10,828	4,098	592	4,690
	1987-88	10,208	664	10,872	4,481	616	5,097
	1988-89	10,738	676	11,414	4,135	613	4,748
Prince Edward Island	1985-86	1,768	—	1,768	781	—	781
	1986-87	1,837	—	1,837	685	—	685
	1987-88	2,019	11	2,030	753	—	753
	1988-89	2,165	16	2,181	812	1	813
Nova Scotia	1985-86	21,662	1,920	23,582	5,680	1,163	6,843
	1986-87r	21,706	1,961	23,667	5,766	1,155	6,921
	1987-88	22,214	2,093	24,307	5,890	1,375	7,265
	1988-89	23,010	2,182	25,192	6,516	1,401	7,917
New Brunswick	1985-86	14,239	679	14,918	4,106	415	4,521
	1986-87	14,272	668	14,940	4,430	506	4,936
	1987-88	14,467	733	15,200	4,408	515	4,923
	1988-89	14,871	802	15,673	4,567	585	5,152
Quebec	1985-86r	95,967	17,347	113,314	100,825	14,691	115,516
	1986-87	98,243	18,148	116,391	102,065	15,734	117,799
	1987-88	98,568	18,055	116,623	102,421	16,237	118,658
	1988-89	100,484	18,384	118,868	107,317	17,002	124,319
Ontario	1985-86	164,007	21,009	185,016	84,882	11,963	96,845
	1986-87	165,655	21,498	187,153	84,153	11,561	95,714
	1987-88	170,665	22,052	192,717	86,756	11,813	98,569
	1988-89	178,248	22,940	201,188	89,596	11,927	101,523
Manitoba	1985-86	17,955	2,389	20,344	12,473	1,591	14,064
	1986-87	17,515	2,420	19,935	13,047	1,548	14,595
	1987-88	17,240	2,366	19,606	13,247	1,528	14,775
	1988-89	17,502	2,281	19,783	13,501	1,554	15,055
Saskatchewan	1985-86r	18,395	1,065	19,460	7,865	784	8,649
	1986-87r	19,258	1,277	20,535	8,492	758	9,250
	1987-88	19,356	1,373	20,729	8,277	724	9,001
	1988-89	18,919	1,359	20,278	8,434	779	9,213
Alberta	1985-86	37,875	4,881	42,756	15,189	2,148	17,337
	1986-87	38,997	5,053	44,050	14,931	2,368	17,299
	1987-88	41,414	5,200	46,614	15,493	2,289	17,782
	1988-89	41,000	5,274	46,274	17,301	2,154	19,455
British Columbia	1985-86	30,835	4,964	35,799	13,879	1,848	15,727
	1986-87	30,678	5,444	36,122	14,028	1,580	15,608
	1987-88	31,695	5,655	37,350	16,109	1,580	17,689
	1988-89	32,651	5,929	38,580	16,376	1,621	17,997
Total	1985-86r	412,417	54,892	467,309	249,772	35,135	284,907
	1986-87r	418,308	57,150	475,458	251,695	35,802	287,497
	1987-88	427,846	58,202	486,048	257,835	36,677	294,512
	1988-89	439,588	59,843	499,431	268,555	37,636	306,192

5.4 DIRECT SOURCES OF FUNDS FOR EDUCATION AT ALL LEVELS, 1979-80 TO 1988-89 (MILLION DOLLARS)

Year	Direct sources of funds					
	Government			Fees	Other sources	Total
	Federal[1]	Provincial[1]	Municipal[2]			
1979-80	1,651.3	13,139.7	3,695.2	761.3	739.1	19,986.6
1980-81	1,891.0	14,717.5	3,850.8	872.7	869.6	22,201.6
1981-82	2,153.0	16,970.9	4,290.9	1,021.2	937.1	25,373.1
1982-83	2,484.8	19,347.9	4,316.4	1,187.3	955.4	28,291.8
1983-84	2,749.1	20,368.4	4,717.7	1,314.3	1,009.7	30,159.2
1984-85	2,999.5	21,266.9	5,063.3	1,437.6	1,348.7	32,116.0
1985-86	3,661.5	22,375.3	5,480.5	1,545.2	1,501.1	34,564.1
1986-87	3,925.7	24,231.2	5,996.2	1,627.0	1,371.9	37,122.0
1987-88	4,044.8	24,831.8	7,038.9	1,742.7	1,430.9	39,089.1
1988-89^p	4,248.9	26,458.3	7,564.9	1,873.5	1,875.2	42,020.8

[1] *In addition to the direct funding reported here, the federal government also provides indirect support in respect of postsecondary education to provinces and territories under the Federal-Provincial Fiscal Arrangements and Federal Post-Secondary Education and Health Contributions Act, 1977 and under the Official Languages in Education Program. For further information on the financing of these programs, please consult Financial Statistics of Education* (Statistics Canada Catalogue 81-208).

[2] *Includes local school taxation.*

5.5 EXPENDITURES[1] ON EDUCATION BY LEVEL AND BY DIRECT SOURCE OF FUNDS, 1987-88 AND 1988-89 (MILLION DOLLARS)

Year, level and direct source of funds		Province or region					
		Nfld.	PEI	NS	NB	Que.	Ont.
1987-88							
Level							
Elementary and secondary		529.4	93.1	739.7	647.3	6,491.8	9,206.8
Postsecondary		205.5	46.3	363.2	246.8	3,400.2	3,780.9
Vocational training		126.1	27.8	128.0	111.1	728.5	806.0
Total		861.0	167.2	1,230.9	1,005.2	10,620.5	13,793.7
Direct source of funds							
Federal government[2]		112.1	29.2	150.5	102.1	880.7	1,113.1
Provincial governments[2]		662.1	129.0	859.7	840.9	8,761.8	7,173.6
Municipal governments[3]		24.0	—	103.5	—	240.8	4,380.5
Fees and other sources		62.8	9.0	117.2	62.2	737.2	1,126.5
Total		861.0	167.2	1,230.9	1,005.2	10,620.5	13,793.7
Total expenditure related to							
Personal income	%	11.8	10.0	9.3	10.1	9.4	7.4
Gross Domestic Product	%	11.6	10.6	8.9	9.2	8.1	6.2
Population	per capita $	1,515.6	1,313.4	1,401.9	1,411.2	1,611.0	1,488.8
Labour force	per capita $	3,864.5	2,796.0	3,085.7	3,215.6	3,264.9	2,762.9
1988-89^p							
Level							
Elementary and secondary		549.7	99.2	782.3	669.9	6,489.2	10,566.9
Postsecondary		229.7	47.8	392.9	276.2	3,717.1	4,063.6
Vocational training		146.8	20.4	131.1	119.4	771.5	807.0
Total		926.2	167.4	1,306.3	1,065.5	10,977.8	15,437.5
Direct source of funds							
Federal government[2]		127.1	20.9	156.1	120.8	915.8	1,168.8
Provincial governments[2]		712.4	134.9	912.9	878.4	8,905.1	8,022.9
Municipal governments[3]		29.1	—	108.2	—	255.2	4,846.0
Fees and other sources		57.6	11.6	129.1	66.3	901.7	1,399.8
Total		926.2	167.4	1,306.3	1,065.5	10,977.8	15,437.5
Total expenditure related to							
Personal income	%	11.8	9.0	9.2	9.9	8.9	7.5
Gross Domestic Product	%	11.8	9.5	8.8	9.1	7.6	6.2
Population	per capita $	1,628.3	1,302.7	1,481.2	1,491.7	1,653.1	1,636.9
Labour force	per capita $	4,013.0	2,713.1	3,200.9	3,347.5	3,315.6	3,016.1

5.5 EXPENDITURES[1] ON EDUCATION BY LEVEL AND BY DIRECT SOURCE OF FUNDS, 1987-88 AND 1988-89
(MILLION DOLLARS) (concluded)

Year, level and direct source of funds		Province or region						
		Man.	Sask.	Alta.	BC	YT and NWT	Overseas and undistributed	Canada
1987-88								
Level								
Elementary and secondary		1,099.7	1,043.6	2,289.2	2,267.3	168.5	35.4	24,611.8
Postsecondary		382.2	360.6	1,269.4	944.4	26.3	114.1	11,139.9
Vocational training		152.3	163.8	427.6	428.4	49.5	188.3	3,337.4
Total		1,634.2	1,568.0	3,986.2	3,640.1	244.3	337.8	39,089.1
Federal government[2]		254.3	251.4	378.5	465.2	5.9	301.9	4,044.9
Provincial governments[2]		832.3	804.6	2,445.7	2,090.8	231.2	—	24,831.7
Municipal governments[3]		387.5	365.1	814.6	716.8	6.1	—	7,038.9
Fees and other sources		160.1	146.9	347.4	367.3	1.1	35.9	3,173.6
Total		1,634.2	1,568.0	3,986.2	3,640.1	244.3	337.8	39,089.1
Total expenditure related to								
Personal income	%	9.4	10.2	9.1	6.9			8.4
Gross Domestic Product	%	8.4	9.2	6.7	5.8			7.1
Population	per capita $	1,514.6	1,543.6	1,676.5	1,244.5			1,525.9
Labour force	per capita $	3,075.9	3,205.9	3,142.9	2,456.9			3,004.1
1988-89p								
Level								
Elementary and secondary		1,204.5	1,063.6	2,355.0	2,494.5	168.2	39.0	26,482.0
Postsecondary		390.5	389.3	1,349.5	1,066.5	24.1	123.0	12,070.2
Vocational training		154.3	161.6	454.3	481.0	40.2	181.0	3,468.6
Total		1,749.3	1,614.5	4,158.8	4,042.0	232.5	343.0	42,020.8
Direct source of funds								
Federal government[2]		262.6	252.8	402.5	510.1	6.1	305.4	4,249.0
Provincial governments[2]		904.8	836.2	2,595.9	2,336.7	218.2	—	26,458.4
Municipal governments[3]		414.5	372.0	766.9	766.1	6.9	—	7,564.9
Fees and other sources		167.4	153.5	393.5	429.1	1.3	37.6	3,748.5
Total		1,749.3	1,614.5	4,158.8	4,042.0	232.5	343.0	42,020.8
Total expenditure related to								
Personal income	%	9.4	10.1	8.7	7.1			8.3
Gross Domestic Product	%	8.1	8.7	6.6	5.9			7.0
Population	per capita $	1,613.6	1,593.0	1,741.0	1,356.3			1,621.8
Labour force	per capita $	3,267.9	3,310.4	3,225.1	2,668.7			3,165.2

[1] *Includes operating, capital, student aid and all departmental expenditures.*

[2] *In addition to the direct funding reported here, the federal government also provides indirect support in respect of postsecondary education to provinces and territories under the Federal-Provincial Fiscal Arrangements and Federal Post-Secondary Education and Health Contributions Act, 1977 and under the Official Languages in Education Program. For further information on the financing of these programs, please consult Financial Statistics of Education* (Statistics Canada Catalogue 81-208).

[3] *Includes local school taxation.*

5.6 EXPENDITURES ON ELEMENTARY-SECONDARY EDUCATION, 1987-88 (MILLION DOLLARS)

Type of expenditure and direct source of funds	Province or region					
	Nfld.	PEI	NS	NB	Que.	Ont.
Type of expenditure						
School boards[1]						
Teachers' salaries[2] including fringe benefits	314.5	54.2	438.0	307.8	2,818.7	5,108.0
Other operating expenses	99.7	23.0	160.3	133.8	1,847.4	2,519.7
Capital and debt charges	35.3	9.4	54.2	3.2	415.9	601.4
Total	449.5	86.6	652.5	444.8	5,082.0	8,229.1
Governmental expenditures on behalf of public schools	71.3	4.7	65.5	193.2	891.0	573.6
Total	520.8	91.3	718.0	638.0	5,973.0	8,802.7
Indian and Inuit schools	0.6	0.3	6.0	5.0	36.0	66.3
Special education	[3]	[3]	[3]	2.1	18.8	73.7
Private schools	[3]	[3]	[3]	2.2	464.0	264.1
Total	529.4	93.1	739.7	647.3	6,491.8	9,206.8
Direct source of funds						
Federal government[4]	0.7	1.6	13.2	11.9	87.1	127.4
Provincial governments[4]	477.5	91.9	607.5	630.8	5,855.8	4,461.9
Municipal governments[5]	23.9	—	103.5	—	240.7	4,380.1
Fees and other sources	27.3	−0.4	15.5	4.6	308.2	237.4
Total	529.4	93.1	739.7	647.3	6,491.8	9,206.8

5.6 EXPENDITURES ON ELEMENTARY-SECONDARY EDUCATION, 1987-88 (MILLION DOLLARS) (concluded)

Type of expenditure and direct source of funds	Province or region						
	Man.	Sask.	Alta	BC	YT and NWT	Overseas and un distributed	Canada
Type of expenditure							
School boards[1]							
Teachers' salaries[2] including fringe benefits	507.1	453.9	1,222.9	1,133.0	74.0	—	12,432.0
Other operating expenses	291.7	276.9	551.4	605.6	36.9	—	6,546.5
Capital and debt charges	97.4	69.2	253.0	195.4	33.8	—	1,768.1
Total	896.2	800.0	2,027.3	1,934.0	144.7	—	20,746.7
Governmental expenditures on behalf of public schools	82.4	134.4	125.9	155.1	22.7	2.2	2,322.0
Total	978.6	934.4	2,153.2	2,089.1	167.4	2.2	23,068.7
Indian and Inuit schools	80.5	84.6	48.9	33.5	0.9	33.2	395.8
Special education	7.7	5.8	30.1	12.1	0.2	—	168.2
Private schools	32.9	18.8	57.0	132.6	—	—	979.1
Total	1,099.7	1,043.6	2,289.2	2,267.3	168.5	35.4	24,611.8
Direct source of funds							
Federal government[4]	108.4	108.3	93.0	74.6	1.3	35.4	662.9
Provincial governments[4]	505.8	493.1	1,281.2	1,350.1	160.0	—	15,915.6
Municipal governments[5]	387.3	364.4	814.1	716.6	6.2	—	7,036.8
Fees and other sources	98.2	77.8	100.9	126.0	1.0	—	996.5
Total	1,099.7	1,043.6	2,289.2	2,267.3	168.5	35.4	24,611.8

[1] *Expenditures of school boards cover calendar year*

[2] *Includes principals and vice-principals.*

[3] *Confidential.*

[4] *In addition to the direct funding reported here, the federal government also provides indirect support in respect of postsecondary education to provinces and territories under the Federal-Provincial Fiscal Arrangements and Federal Post-Secondary Education and Health Contributions Act, 1977 and under the Official Languages in Education Program. For further information on the financing of these programs, please consult Financial Statistics of Education* (Statistics Canada Catalogue 81-208).

[5] *Includes local school taxation*

5.7 EXPENDITURES ON VOCATIONAL TRAINING, 1987-88 (MILLION DOLLARS)

Type of training	Province or region												
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	Overseas and undistributed	Canada
Human resource training[1]													
Federal government	87.2	22.5	82.4	63.2	461.4	497.0	87.2	77.3	161.5	227.6	2.8	8.6	1,778.7
Provincial and municipal governments	30.1	3.6	27.4	36.9	211.9	155.5	19.2	51.8	159.7	105.9	24.9	—	826.9
Fees and other sources	3.9	1.0	2.1	7.6	31.7	46.4	6.0	6.1	41.3	49.4	0.1	—	195.6
Total	121.2	27.1	111.9	107.7	705.0	698.9	112.4	135.2	362.5	382.9	27.8	8.6	2,801.2
Other[2]	[3]	[3]	[3]	[3]	13.9	88.1	37.6	25.9	60.6	42.6	21.7	143.8	456.7
Private[e]	[3]	[3]	[3]	[3]	9.6	19.0	2.3	2.7	4.5	2.9	—	35.9	79.5
Total	126.1	27.8	128.0	111.1	728.5	806.0	152.3	163.8	427.6	428.4	49.5	188.3	3,337.4

[1] *Includes training courses purchased by the federal government, capital expenditures, grants for training in industry and allowances to trainees.*
[2] *Includes nursing assistants, training, trades training in reform schools and in penitentiaries and other training programs within federal and provincial departments.*
[3] *Confidential.*

5.8 EXPENDITURES ON POSTSECONDARY EDUCATION, 1987-88 (MILLION DOLLARS)

Type of expenditure and direct source of funds	Province or region					
	Nfld.	PEI	NS	NB	Que.	Ont.
Type of expenditure						
Operating						
Community colleges	24.5	9.0	23.6	24.0	951.5	778.2
Universities	136.1	26.1	294.4	166.2	1,658.4	2,470.1
Total	160.6	35.1	318.0	190.2	2,609.9	3,248.3
Capital	19.3	7.5	18.0	17.8	219.9	144.3
Student aid						
Scholarships and awards	13.2	2.9	18.4	14.6	229.2	243.6
Cost of loans[1]	10.6	2.0	13.3	11.8	77.5	89.7
Total	203.7	47.5	367.7	234.4	3,136.5	3,725.9
Other direct departmental expenditures	1.8	−1.2	−4.5	12.4	263.7	55.0
Total	205.5	46.3	363.2	246.8	3,400.2	3,780.9
Direct source of funds						
Federal government[2]	24.1	4.8	52.1	25.0	321.8	448.1
Provincial governments[2]	149.9	33.2	213.3	172.4	2,690.6	2,508.6
Municipal governments	—	—	—	—	0.1	0.5
Fees and other sources	31.5	8.3	97.8	49.4	387.7	823.7
Total	205.5	46.3	363.2	246.8	3,400.2	3,780.9

Type of expenditure and direct source of funds	Man.	Sask.	Alta.	BC	YT and NWT	Overseas and un-distributed	Canada
Type of expenditure							
Operating							
Community colleges	32.6	28.9	224.1	199.9	12.5	—	2,308.8
Universities	283.2	254.1	654.1	549.3	—	—	6,492.0
Total	315.8	283.0	878.2	749.2	12.5	—	8,800.8
Capital	7.4	29.1	156.8	54.4	6.7	—	681.2
Student aid							
Scholarships and awards	15.4	26.6	110.2	39.7	5.2	28.1	747.1
Cost of loans[1]	12.7	8.9	54.7	22.8	0.2	—	304.2
Total	351.3	347.6	1,199.9	866.1	24.6	28.1	10,533.3
Other direct departmental expenditures	30.9	13.0	69.5	78.3	1.7	86.0	606.6
Total	382.2	360.6	1,269.4	944.4	26.3	114.1	11,139.9
Direct source of funds							
Federal government[2]	57.8	50.7	118.5	159.6	1.4	114.1	1,378.0
Provincial governments[2]	270.7	249.0	947.6	595.6	25.1	—	7,856.0
Municipal governments	0.2	0.7	0.5	0.2	—	—	2.2
Fees and other sources	53.5	60.2	202.8	189.0	−0.2	—	1,903.7
Total	382.2	360.6	1,269.4	944.4	26.3	114.1	11,139.9

[1] *Excluding the value (principal) of loans.*

[2] *In addition to the direct funding reported here, the federal government also provides indirect support in respect of postsecondary education to provinces and territories under the Federal-Provincial Fiscal Arrangements and Federal Post-Secondary Education and Health Contributions Act, 1977 and under the Official Languages in Education Program. For further information on the financing of these programs, please consult Financial Statistics of Education* (Statistics Canada Catalogue 81-208).

Source

Statistics Canada.

Chapter 6

Bell Canada Telephone Company/National Archives of Canada/PA 95419

EMPLOYMENT AND INCOMES

6.1 INTRODUCTION

CANADA'S WORKFORCE is among the most skilled and highly trained in the world, and Canadians have income levels equivalent to those of other industrialized nations.

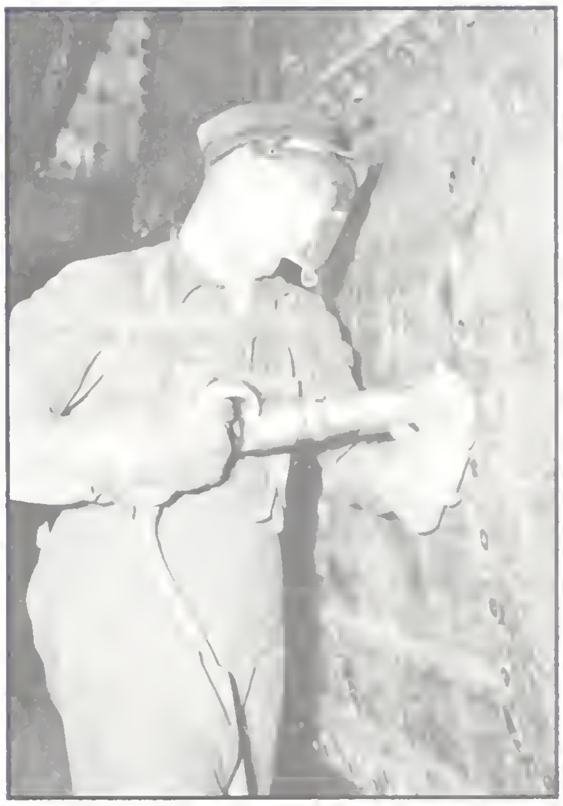
Recently, however, Canada's workforce has been facing rapidly changing conditions. Early retirement, job-sharing, plant closures and relocations — all have affected traditional expectations of employment security and corporate stability.

The bywords in today's highly competitive business environment are adaptability and flexibility. Consequently, training and retraining have become accepted as necessary and permanent features of working life.

Canada has a long history of concern for its workforce. Two federal government departments, Labour Canada and Employment and Immigration Canada, administer legislation and programs aimed at securing a fair and efficient labour market consistent with national economic and social goals. The provinces and territories also have legislation and standards regulating employment.

Governments work with labour unions and business to shape the workplace. Legislation sets minimum standards for working conditions, wages and termination procedures. Unions and collective agreements help improve working conditions and pay.

Canada monitors its workforce through surveys and other data-gathering efforts that measure changes in the labour market month-to-month, and monitor short- and long-term trends. Measurements such as the concentration of employment in various sectors, unemployment rates, and participation rates by various population groups influence national policies. Statistics on incomes and spending are used to help set policies that safeguard the economic well-being of working Canadians.



Dept. of National Defence/National Archives of Canada/PA 150155

6.2 THE WORKFORCE

COMPOSITION OF THE LABOUR FORCE

At the time of Confederation, nearly half the Canadian labour force worked on the land. In 1989, fewer than 4% did so. Most changes in the general workforce in the last 20 years have not been so dramatic, but some pronounced shifts have occurred.

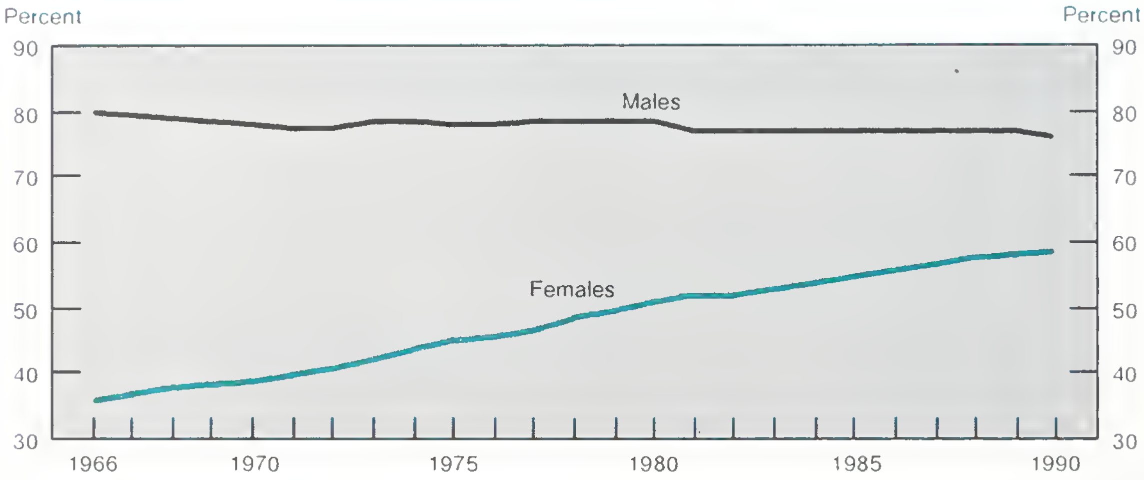
During the 1970s, the labour force increased by 3.2% annually, fed by the post-war baby boom. In the 1980s this growth slowed to 1.9% annually, as a result of a shrinking youth population, slower increases in participation rates, and the impact of the 1981-82 recession. By international standards, however, this was still a strong performance.

Since 1969, the greatest contributors to labour force growth have been women, who now comprise 44% of the labour force.

With the baby boom generation approaching middle-age in the 1980s, the labour force is aging. The 15 to 24-year-old component of the labour force has declined; after growing an average of 3.4% a year from 1969 to 1981 (reaching a peak of over 3 million in that year), it has since declined by an average of 1.7% annually. If participation rates for this age group had not been increasing, this decline would have been even greater.

Chart 6.1

LABOUR FORCE PARTICIPATION RATE (15 YEARS OF AGE AND OVER)



Recent years have seen the gradual but steady decline in the proportion of workers aged 55 and over. This decline began before the 1970s, and has affected men more than women. It comes from the post-war immigration to Canada of younger workers, and from the influx of "baby-boomers" into the labour market. But it also reflects a long-term decline in this age group's participation rate, which dropped from 36% in 1969 to 27% in 1989. The average age of the labour force, however, rose from 35.5 in 1979 to 36.3 in 1989.

In the 1990s, Canada is preparing to deal with the consequences of an aging working population. At the same time, the growing participation of women brings emphasis on issues such as child care, pay equality and access to non-traditional occupations.

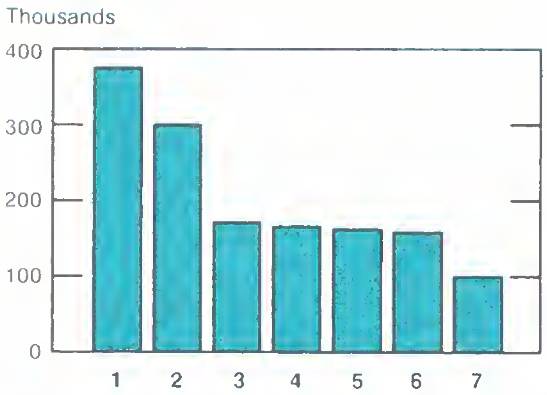
STRUCTURE OF THE EMPLOYMENT MARKET

The industrial structure of employment has changed dramatically over the past 20 years. In the early 1970s, 37% of employment was in **goods-producing industries**; by 1989, this had dropped to 29%. Within this sector, agriculture lost employment and other goods-producing industries (with the exception of construction) trailed overall growth. Manufacturing employment grew by only 3% during the 1980s; manufacturing now accounts for 17% of employment, down from 22% in 1970. Construction employment grew by 38% in the 1970s, but then fell in the 1980s.

From 1970 to 1979, the **service-producing industries** accounted for 79% of total employment growth; this soared to 94% from 1979 to 1989. In the service sector, only transportation, communications and other utilities industries have had below average growth over the past 20 years. By contrast, employment in community, business and personal service industries has doubled since 1970.

Chart 6.2

UNIONS WITH LARGEST MEMBERSHIP, 1990



1 Canadian Union of Public Employees

2 National Union of Provincial Government Employees

3 United Food and Commercial Workers International Union

4 National Automobile, Aerospace and Agricultural Implement Workers Union of Canada

5 Public Service Alliance of Canada

6 United Steelworkers of America

7 International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America

ORGANIZED LABOUR IN CANADA

Canada's earliest recorded trade union was a printer's organization formed in 1827 in Quebec City. Printers also founded Ontario's first union as early as 1834 in York (now Toronto). Shoemakers and stonemasons organized soon after, followed by sailmakers, longshoremen and other skilled workers. Unskilled workers had little success forming durable unions.

Immigrants introduced the concept of trade unions to Canada in the early 19th century. Unions were already established in many European countries and were used as examples for North American counterparts. Industry in other countries, such as the United States, was further developed and as a result trade unions were created there first and later brought to Canada.

Like the early unions in Great Britain and the United States, Canada's unions were initially all local organizations. During the 1850s and 1860s, the United States encouraged Canadian groups to consolidate with their American counterparts. To reflect the change, unions such as the National Typographical Union of the United States changed their names. In 1869, this union became the International Typographical Union and many other unions followed its lead.

In the beginning trade unions were illegal because they were thought to restrain trade. They were legalized in Canada in 1872, and in 1873 the Canadian Labour Union, the first national labour body, was formed. In 1886, its name was changed to the Trades and Labour Congress and, by 1920, it had 173,463 members.

In 1990, union membership in Canada totalled more than 4 million, with 234 national and 61 international unions.

United Steelworkers of America/National Archives of Canada/C 98718

Miners' strike, 1953.

In line with the rapid expansion of the service sector, employment in white-collar occupations was up 30% in the 1980s, compared to 3% for blue-collar jobs. The occupational composition of the labour force reflected greater specialization in managerial and scientific work. Four occupational groups made relatively large gains, based on 1986 Census data: social sciences and related fields (29%); managerial and administrative (27%); artistic, literary, recreational and related occupations (20%); and medicine and health (15%).

Occupations with declining employment since 1981 included mining and quarrying (including oil and gas field occupations); processing; machining and related occupations; construction; and material handling and related occupations. Clerical, sales, and service occupations remained the largest occupational groups numerically; however, the largest group, clerical occupations, had a rate of growth well below that of the labour force as a whole.

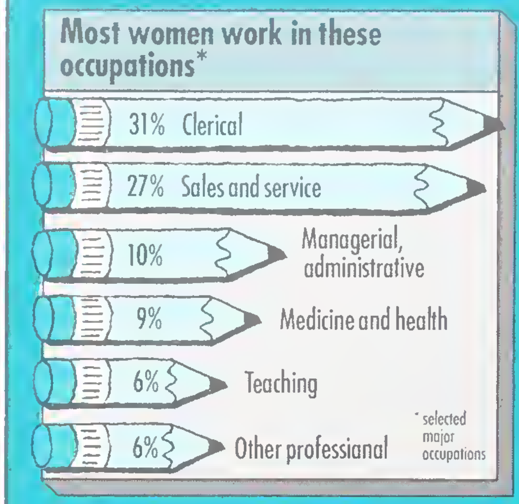
Employment Growth in employment fluctuated in 1988. A moderate rise in 1989 was followed by a similarly moderate decline in 1990. At the provincial level, both Quebec and Ontario recorded this employment fluctuation. Nationally, forestry and manufacturing led all industries in employment declines over this three-year period, while transportation, communication and other utilities reported the largest employment increase.

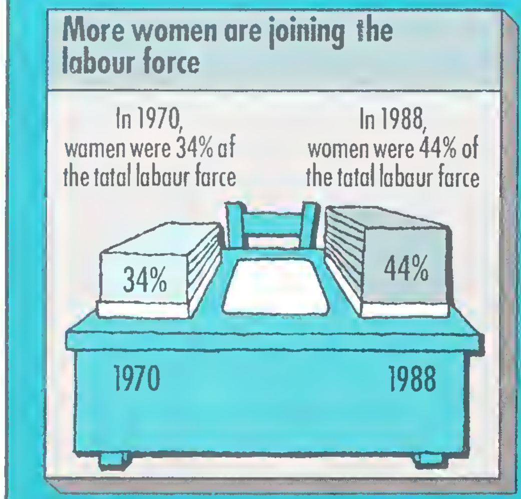
Unemployment The unemployment rate averaged 6.8% in the 1970s, and 9.3% in the 1980s. The 1983 annual rate (11.8%) was the highest since the 1930s. By 1989, the rate had fallen back to pre-recession levels.

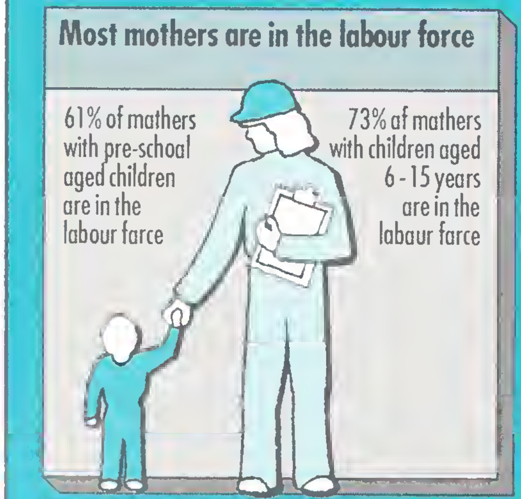
Since 1981, unemployment has remained above the one million mark, peaking at over 1.4 million in 1983. From 1981 to 1989, the average duration of unemployment increased from 15.1 weeks to 17.3 weeks.

Influence of organized labour **Union membership** represented 36.2% of Canada's non-agricultural paid labour force in 1990. The number of union members increased from 1985 to 1990, but the non-unionized workforce grew more rapidly. The three major public service unions accounted for about 20% of all union membership.

CANADA'S WORKING WOMEN






Most mothers are in the labour force
61% of mothers with pre-school aged children are in the labour force
73% of mothers with children aged 6-15 years are in the labour force

Courtesy of Status of Women Canada

Over the past two decades, Canadian women have continued to make major strides in labour force participation and pay equity.

In 1970, women comprised 33% of the total labour force; by 1988, they comprised 44%. Over the same period, average earnings for full-time working females went from 58% to 66% of average male earnings.

The most striking increase in labour force participation occurred among women with children living at home. In 1986, 60% of these women were in the labour force, compared to 34% in 1971.

Canadian women have been concentrated in low-paying service jobs. In fact, the proportion of women in the traditionally female clerical, sales and service occupations rose from 55% in 1971 to 58% in 1986.

Women are also much more likely than men to hold part-time jobs, generally with fewer benefits and less security. In 1988, about one in four working women held a part-time job, compared to one in 10 working men.

On the other hand, from 1971 to 1986 the proportion of managerial positions held by women jumped from 15% to 30%. And since 1975 the number of self-employed women has risen three times as fast as the number of self-employed men.

These changes are largely a reflection of the increasing numbers of women enrolling in Canada's universities. In 1970-71, 37% of university students were women; by 1987-88, female enrolment had increased to 54% of the total. However, more women than men were enrolled in part-time studies and undergraduate programs, while men predominated in graduate programs.

In many respects, women's work in Canada has been a function of economic necessity. At Confederation, most Canadians lived on farms, and families with eight to 10 children were not uncommon. Traditionally, men operated the farms, while women cared for the household — a daunting task in the absence of appliances and indoor plumbing.

When farm life was supplanted by the emergence of industry, employment for women was concentrated almost exclusively in low-paying occupations — as dressmakers, teachers, housekeepers, laundresses and clerical workers. In 1901, women comprised 13% of Canada's paid labour force, and working women earned on average about half of men's income.

During World War II, women replaced men in virtually every occupation and profession. With the return of war veterans, women were encouraged to leave the work force — some were even legislated out. However, not all were willing or able to give up an income, and by 1951 women comprised 22% of the total labour force.

With the economic boom of the 1950s and 1960s, a large number of low-paying service and clerical jobs were created. These jobs were usually taken by women, who were still generally thought of as temporary employees, easily displaced from the work force by pregnancy or family duties. In fact, increasing numbers of married women found full-time work necessary to cover the family's household expenses.

In the 1990s, pay equity legislation and equal opportunity employment policies are helping narrow wage gaps. At the same time, increasing numbers of women are challenging traditional concepts of what constitutes women's work.

Statistical information on **work stoppages** is compiled by Labour Canada. In 1989, 67 major work stoppages involving 406,146 workers resulted in a loss of 2,080,980 person-days. A major work stoppage is defined as one involving 500 workers or more. Measured as a percentage of the total working time of non-agricultural paid workers, time lost in 1989 was 0.07% — well below the average for the 1980s.

6.3 REGULATING THE WORKPLACE

Federal and provincial governments regulate the workplace. Provincial governments have departments responsible for industrial relations and employment standards. Federally, Labour Canada and Employment and Immigration Canada influence labour market conditions.

Labour Canada strives to secure a working environment supporting physical and social well-being, a fair return for effort, and equal access to employment opportunities. Employers, employees and trade unions engaged in federal works are covered by federal legislation on labour standards, safety of employees and industrial relations.

Labour Canada helps arbitrate industrial disputes. It determines wage rates and hours of work for federal government contracts, and promotes improved industrial relations through union-management consultation and mediation. The department also funds research on workplace issues, ensures that labour groups participate in important policy discussions, and arranges temporary staff exchanges between labour organizations, government departments, and joint labour-management institutions.

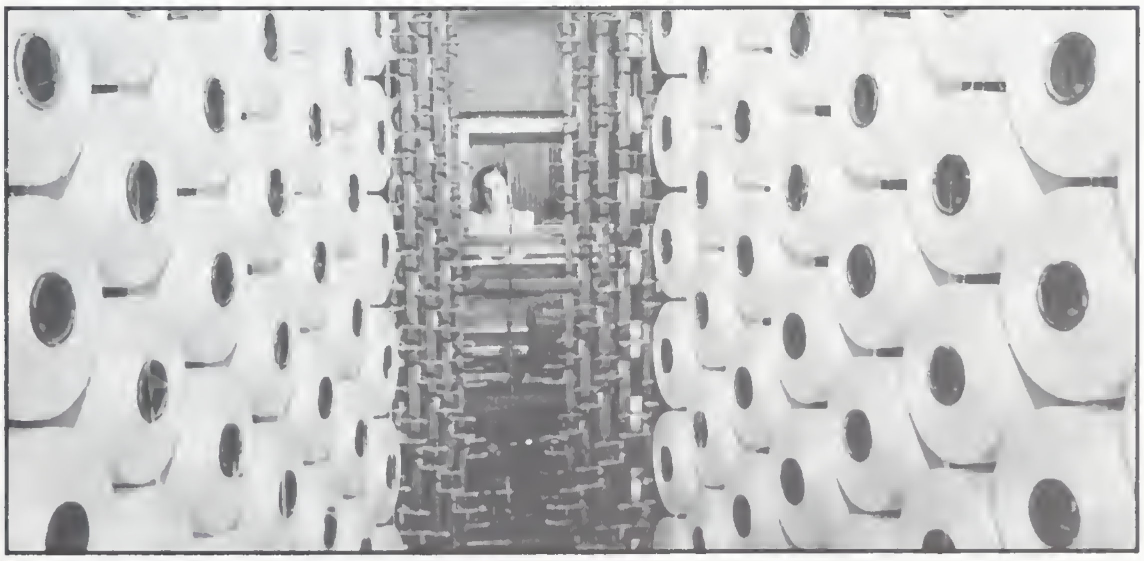
Established in 1954, Labour Canada's **Women's Bureau** promotes equality in the workplace. The Bureau monitors women's progress in the paid workforce and researches emerging policy issues. It also works with employers, unions, women's groups and the public to promote better working conditions for women.

Employment and Immigration Canada (EIC), in co-operation with the public and private sectors, develops and applies labour market policies and programs. EIC helps create a labour force that can grow and adapt without placing undue burdens on individuals, groups and regions, and that offers equal opportunity and access to jobs.

The Canadian jobs strategy is administered through the 463 Canadian Employment Centres. A joint effort of the federal government, the provinces and the private sector, the strategy aims to provide equal opportunities for all Canadians, particularly those at a disadvantage in the labour market. Special emphasis is given to the four groups designated in the Employment Equity Act — women, persons with disabilities, aboriginals and visible minorities — and to the long-term unemployed, young people, and workers who lose their jobs because of labour market changes.

The **industrial adjustment service** provides a forum for employers and employees to solve employment problems together. It can help laid-off workers find new jobs, or help floundering businesses recover.

Local advisory councils encourage business, labour and community groups to discuss local employment issues with government representatives.



Nicholas Morant/National Archives of Canada/PA 160563

Montreal textile factory, 1945.

WOMEN'S RIGHTS

1916	**- Women in Manitoba, Alberta and Saskatchewan gain right to vote in provincial elections.**
1917	**Women with property permitted to hold office in Saskatchewan. Women in British Columbia and Ontario gain right to vote in provincial elections.**
1918	**Women gain full federal franchise. Women in Nova Scotia gain right to vote in provincial elections.**
1919	**Women in New Brunswick gain right to vote in provincial elections.**
1920	**Uniform franchise established through the *Dominion Election Act*, making permanent the right of women to be elected to Parliament.**
1922	**Women in Prince Edward Island gain right to vote and to hold elected office.**
1925	**Women over 25 gain right to vote in Newfoundland.**
1929	**Women are deemed "persons" and can therefore be appointed to the Senate after the British Privy Council overturns Supreme Court of Canada's 1928 *Persons Case* decision, which had interpreted the BNA Act to mean women were not "persons" and could therefore not be appointed to the Senate.**
1940	**Women in Quebec gain right to vote in provincial elections, completing enfranchisement of women in Canada.**
1983	***Canadian Human Rights Act* amended to prohibit sexual harassment and to ban discrimination on basis of pregnancy and family or marital status.**

The Development of the Public Service Commission

Canada's Public Service Commission (PSC) was first established in 1908 as the Civil Service Commission (CSC), which was charged with guiding the hiring and promotion of civil servants on the basis of merit rather than political patronage. Following similar developments in the British civil service, examinations were introduced for the first time to screen applicants for government positions.

Administering the merit system became increasingly difficult during World War I, which demanded a doubling of the civil service to more than 40,000 employees by 1918. In that year, the ***Civil Service Act*** *gave the CSC full legal command of government personnel administration, charging it with extending the examination system and reorganizing the entire civil service.*

Competitive examinations to measure "the relative fitness and ability of candidates to actually perform the duties of the class to which they seek to be appointed" are still the hallmark of the merit principle. On the other hand, attempts at reorganizing the civil service led to a political uproar when the new classification system, designed by an American consulting firm, turned out to be extraordinarily complex.

The CSC's power diminished through the 1920s and the Depression. With the outbreak of World War II a committee of cabinet, the Treasury Board, began making the major civil service policy decisions. As in World War I, the times demanded a quick expansion of the civil service, this time almost tenfold to 60,000 employees. During this period, the CSC acted mainly as an investigative agency making sure departments followed the Treasury Board's policies.

In 1962, the Glassco Commission recommended that the Treasury Board make personnel policy for the entire civil service, that departments manage their own personnel administration, and that the Commission operate a central recruiting service and ensure appointments to the civil service are free of political patronage.

In 1967, Canada's centennial year, three acts of Parliament completely overhauled the federal personnel management system: the ***Public Service Employment Act****, the* ***Public Service Staff Relations Act*** *and the* ***Financial Administration Act****.*

These acts made the Treasury Board the general manager of the public service and the renamed Public Service Commission became responsible for all elements of the staffing process. They also paved the way for collective bargaining by civil service staff associations, eliminated official discrimination on the basis of sex, and began the process of transforming the public service into a bilingual organization.

Today, the PSC remains the central staffing agency of the federal government, which includes some 50 departmental agencies and more than 200,000 employees. While still guarding the merit principle, special staffing initiatives aim at increasing the participation of under-represented groups such as women, francophones, Native peoples, visible minorities and disabled persons.

LABOUR LEGISLATION

Labour legislation imposes conditions on the rights of employers and employees. Because provincial legislatures make laws on civil rights, labour legislation has become largely a provincial matter. The provinces have enacted legislation affecting working hours, minimum wages, physical conditions of workplaces, apprenticeships and training, wage payment and wage collection, labour-management relations and worker compensation.

The three primary areas covered by labour legislation are industrial relations, occupational safety and employment standards. At the federal level, these are consolidated under the Canada Labour Code, which applies to federal undertakings and any other operations that Parliament declares to be for the general advantage of Canada or for two or more of the provinces.

Industrial relations Part I of the Canada Labour Code regulates labour-management relations under federal jurisdiction. Labour Canada's **Federal Mediation and Conciliation Service** administers the dispute resolution provisions of the code. The service prevents or settles collective bargaining disputes and other industrial relations problems.

When disputes arise, the Minister of Labour may appoint a conciliation officer, commissioner or board. If conciliation fails, a mediator may be appointed to try to avert a strike or lockout. Both conciliation and mediation efforts rely on persuasion and exploring available alternatives. The process differs from arbitration, in which a third party makes a binding decision.

The Canada Labour Relations Board deals with complaints of unfair labour practices, applications for introducing technological change, allegations of unlawful strike or lockout, and charges that employees have been penalized for exercising their rights. The board can order reinstatement, compensation, cease and desist orders, stays of implementation, or other relief. The board also supervises hiring hall rules, and requires trade unions and employer organizations to provide annual financial statements to their members.

Provincial industrial relations legislation is intended to establish good relations between employers and employees and to help settle industrial disputes. This legislation authorizes labour relations boards or other administrative bodies to certify trade unions as bargaining agents, and requires employers to bargain with certified unions. In some provinces, parties must comply with conciliation or mediation procedures before a strike or lockout is legal. Collective agreements must include mechanisms for settling disputes that arise from interpreting or applying the agreement. Strikes and lockouts are not permitted during the life of a collective agreement. In some provinces, separate statutes regulate labour relations for essential service professions such as teachers, hospital workers and police. Most provinces also have special provisions or legislation applying to the construction industry.

Occupational safety and health Part II of the Labour Code was the first legislation dealing exclusively with occupational safety and health. It obliges employers and employees to perform their duties safely, makes it possible to introduce regulations to deal with safety and health problems, and provides the basis for joint labour-management safety and health committees. It gives workers the right to refuse to work when their health or safety could be endangered, and authorizes funding for research into preventing accidents and for safety education programs.

Workplace regulations cover fire safety, sanitation, heating, lighting, ventilation, protective equipment, materials handling, tool safety, protection from dangerous machinery, handling of explosives, and protection from noise and radiation. Other laws govern toxic substances and occupational health hazards. Hazardous industries such as mining, construction, demolition and logging are specifically regulated. All provinces require safety inspections, and impose penalties when an employer contravenes any provision of an occupational safety act or regulation or fails to comply with a direction made by an inspector.

Labour Standards Part III of the Canada Labour Code sets minimum employment standards. Provincial and territorial governments also have legislation covering labour standards. This legislation sets the **standard workday and workweek** and requires overtime payment for work beyond normal work hours. Under the Canada Labour Code, the maximum workday is eight hours and the maximum workweek is 40 hours. Generally, no more than eight hours of overtime may be worked in a week, and the overtime rate must be at least one and one-half times the regular rate.

J. Ballantyne/National Archives of Canada/PA 130013

Stonecutters at work on the Victoria Memorial Museum, Ottawa, 1899.

Dept. of National Defence/National Archives of Canada/PA 35072

Clearing deadfall, B.C, 1933.

Milton Meade/National Archives of Canada/PA 145666

Assembling radio wiring, Northern Electric Company, Montreal, 1944.

Minimum wage legislation is reviewed frequently. Pieceworkers and employees paid a mileage rate must be paid the equivalent of the minimum wage. Employers providing on-the-job training may not have to pay minimum wage during all or part of the training period. Some provinces have separate rates for young workers or students.

In some provinces, **supplemental regulation of wages and hours** apply to specific industries, occupations or classes of workers. For example, Quebec regulates wages in the retail food trade, British Columbia has special wage rates for domestics, farm workers and residential caretakers, and Alberta has special weekly minimums for commercial agents and salespeople.

Employers must offer **annual vacations with pay** to their employees. The minimum is two weeks, rising to three weeks in some cases after four to 10 years employment.

Under federal jurisdiction, there are nine paid general holidays; under provincial and territorial jurisdiction, the number varies from five to nine days.

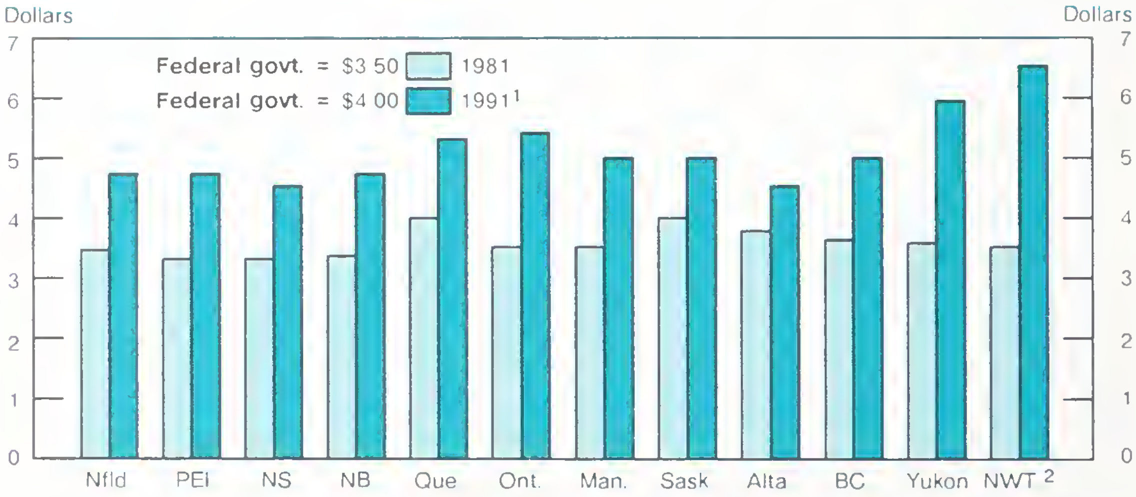
Maternity leave and job security before and after childbirth are guaranteed in Canada. Maternity leave is 17 or 18 weeks and some provinces permit employees to divide this time into pre- and post-natal leave. Paternity and/or adoptive leave legislation exists in six provinces. In addition to maternity leave, federal legislation allows 24 weeks of child care leave for either parent, natural or adoptive.

All legal jurisdictions have a **human rights** code with employment provisions that prohibit discrimination on the basis of race, religion, national origin, colour, sex, age and marital status. Prohibited grounds can also include political beliefs, creed, ethnic origin, physical handicaps, sources of income, ancestry, social condition, criminal convictions for which pardons have been granted, and sexual orientation.

The federal government has guidelines for giving equal employment opportunities in the public service to Canadians with disabilities, and many federal public buildings now have handicap access.

Chart 6.3

MINIMUM WAGES PER HOUR



[1] As of April 1, 1991.

[2] The 1991 figure is $7.00 in areas distant from the NWT highway system.

Apprenticeship laws require on-the-job training and school instruction for designated skilled trades. The provinces are responsible for issuing qualification certificates. Certain classes of tradesmen are legally required to hold certificates of competency.

Employers must give notice of **termination of employment**. Under federal jurisdiction, employees with three consecutive months of employment must be given two weeks notice in writing or two weeks wages. The federal labour code prohibits dismissal, layoff or suspension because of garnishment or notice of garnishment proceedings. Employees are protected against dismissal for absences due to sickness for up to 12 weeks, or for a longer period if the employee is undergoing treatment and rehabilitation at the expense of a worker compensation authority. Unorganized employees can lay complaints if they feel they have been dismissed unjustly. Quebec protects employees with five years' service against dismissal without just cause. Nova Scotia does the same for employees with 10 years' service.

H.E. Fuller/National Archives of Canada/C-26783

The great General Strike, Winnipeg, Manitoba, 1919.

For **group termination of employees**, special rules apply under federal jurisdiction and in six provinces. The notice period required ranges from four to 18 weeks depending on the number of employees being terminated.

Under federal jurisdiction, **severance pay** is required when an employer terminates an employee who has 12 months of service. The prescribed payment is five days' wages or two days' wages for every year of employment, whichever is greater. Ontario provides for severance payments in certain circumstances.

6.4 INCOME SAFETY NETS

Because most Canadian families support themselves with employment income, programs that replace earnings in the event of job loss, injury at work, disability or retirement are an essential social "safety net".

UNEMPLOYMENT INSURANCE

The Unemployment Insurance Act covers virtually all paid workers as well as members of the armed forces. The major exceptions are individuals working fewer than 15 hours per week and earning less than 20% of the maximum weekly insurable earnings ($640 in 1990).

After a qualifying period (usually the 52 weeks immediately preceding the claim) workers are eligible for unemployment insurance in compensation for loss of earnings. Regular benefits apply to laid-off workers, and special benefits cover sickness and the birth or adoption of a child. Benefits are also available for training, job creation and work-sharing, and for seasonally-employed fishing industry workers. In late 1990, the unemployment insurance program was amended, to allow for more training and other measures to help workers adapt to changing labour market conditions.

In 1989, over $11.5 billion in benefits was paid to 2.8 million claimants. This compares with a total of $4.4 billion in 1980. On average, 1,450,700 claims were made each month in 1989, down 13.6% from 1983. Over the same period, average weekly benefits rose from $152.72 to $215.88.

RIGHT TO STRIKE

Canadians indirectly won the right to strike in 1872 with the passage of the *Trade Union Act*, which recognized the legality of trade unions. The Act followed the famous Toronto printers' strike of the same year when more than 100 workers stayed off the job for almost two months, eventually winning better wages and a 54-hour work week. Despite the new Act, however, picketing remained illegal in Canada until 1934.

Canada's most famous strike was the Winnipeg General Strike of 1919 when 22,000 workers from a wide variety of trades, including firefighters and police, walked out mainly for better wages to combat the inflation that followed World War I. The strike ended violently after a charge on protestors by the North West Mounted Police left one dead and 30 injured. In the confusion that followed, federal troops occupied the city.

Canada's largest strike occurred in Quebec in 1972, a century after the Toronto printers' strike. The provincial government, hospitals and schools all faced walk-outs by a united group of public-sector unions.

In 1989, more than 2 million person-days were not worked because of major work stoppages, down from nearly 7 million in 1980.

WORKER COMPENSATION

Worker compensation legislation protects victims of work-related accidents and illnesses. Benefits cover medical costs, hospitalization and rehabilitation, funeral costs, disability pensions, and compensation for loss of earnings.

The primary objective of worker compensation is to help get workers back to work, and to lessen handicaps. Some boards help dependent spouses of deceased workers to find employment or become self-sufficient.

Over one million Canadians are injured every year in work-related accidents. In 1989, approximately 60% of these injuries were sufficiently severe or disabling that employees needed time away from work for recuperation, rehabilitation or hospitalization.

From 1979 to 1989, the labour force grew by approximately 20%. During the same period, the number of non-disabling injuries declined by 32.2%, and fatal injuries dropped by 8%. However, disabling injuries increased by 22.4%; but this was largely because the definition of injury used by the provincial and territorial Workers' Compensation Boards has been expanded.

In 1989, Workers' Compensation Boards paid nearly $3.9 billion for nearly 1.1 million claims. About 46% of this total compensated for lost earnings, 33% went for pensions, 12% for medical aid, 8% for hospitalization, and the remaining 1% for funeral expenses.

In both 1988 and 1989, more than 800 Canadians were victims of a fatal accident or occupational illness. From 1985 to 1989, more than 4,000 workplace fatalities occurred.

PENSION PLANS

Income support for the elderly in Canada is based on a three-tiered system. The first is the Old Age Security/Guaranteed Income Supplement program, which provides flat-rate, universal benefits unrelated to work history. The second comprises the Canada and Quebec Pension plans, which are earnings-related and cover all workers in Canada. The third tier includes employer-sponsored pension plans (private pension plans), registered retirement savings plans, and other savings.

At the beginning of 1988, approximately 45% of all paid workers including those in the armed forces were covered by private pension plans. Pension plan membership had increased by 4% from 1986, and by 16% from 1978. Women accounted for four-fifths of this increase. By far the largest concentration of employees covered by employer-sponsored pension plans is in the public sector.

UNEMPLOYMENT INSURANCE

In 1914, injured workers, widowed mothers and the elderly were all granted government aid; but in the midst of the Great Depression, jobless Canadians still had no legislative protection. In 1933, one out of every three Canadian workers was unemployed and had nowhere to turn.

More than 20% of the population barely survived on local relief rations. Some of the country's 2 million unemployed cut wood or broke rocks in local poorhouses for a bag of groceries or bucket of coal; others drained swamps and built roads for 20 cents a day in government work camps.

Until the early 1920s, Canada was still a rural society. The family was the major source of social security. Private charities helped if necessary, but people generally did not look outside their community for aid. Changes occurred as World War II approached. Forty-four per cent of the men chosen for selective service were rejected due to poor health and the government began to accept the unemployed as its general responsibility.

In 1942, the first unemployment insurance benefits were paid; a single person could receive $14.40 per week, and a person with dependents, $18.30. By contrast, in 1989 the average weekly payment was $215.88. Across Canada these benefits totalled more than $11.5 billion for 1989.

6.5 WORKFORCE TRENDS

The Survey of Employment, Payrolls and Hours (SEPH) is a sample survey covering firms and organizations in all industries except agriculture and fishing and trapping. Religious organizations, private households and military personnel are also excluded. SEPH provides monthly estimates of employment levels, average weekly earnings, average weekly hours and average hourly earnings.

In 1991, the 1980 version of the Standard Industrial Classification (SIC) system replaced the 1970 version in SEPH. Data for 1983 onwards are currently being revised using the more recent SIC. Specific figures were not available when the Year Book went to press, but certain general trends were evident.

Average weekly earnings for all Canadian industries showed steady increases from 1988 to 1990. The most notable increases were registered in construction, public administration and mines, quarries and oil wells.

Employees paid by the hour represent almost half the industrial work force. During this three-year period, their average weekly hours decreased significantly, particularly in transportation, communication, other utilities and manufacturing. However, average hourly earnings (including overtime) rose steadily. All industries recorded increases, with construction and community, business and personal services leading the way. Finance, insurance and real estate reported the smallest increases.

Family income trends Statistics Canada produces annual statistics on income distribution for families and individuals. These statistics are essential for developing and evaluating policies and programs that ensure the economic well-being of Canadians.

The average income of Canadian families (in current dollars) rose from $24,643 in 1979 to $50,083 in 1989. However, when decreases in the purchasing power of the dollar are accounted for, average family income increased 8.6%. In 1989, average family incomes ranged from approximately $39,000 in Prince Edward Island to over $57,000 in Ontario. Only Ontario had an average family income above the national average.

In 1989, the top earning 20% of all families received 39.3% of income, while the lowest earning 20% received only 6.5%.

Low-income incidence increased at the start of the 1980s, but then declined steadily until 1989. At the end of the decade, the rate of 12.2% was lower than the 1980 rate of 14.2%. Low-income incidence for elderly persons was almost halved during the decade, dropping to 15.9% from 27.7%. For children, however, the rate at the end of the decade (14.6%) was virtually unchanged from 1980. Low income rates for unattached individuals are more than three times higher than for families. Families headed by females under 65 years of age (the majority of these are single-parent families) had the highest incidence of low income. For unattached individuals, females over 65 years of age had the highest rate.

Family spending trends Not surprisingly, income is the most influential factor bearing on family spending, although geographic location and family size also play a part.

The most dramatic change in family spending over the past 50 years occurred in the share of expenditures for food and shelter. From 1937-38 to 1986, the share for food decreased from 28.8% to 14.2%, while the share for shelter declined from 25.6% to 15.7%. On the other hand, the share for transportation more than doubled, rising from 5.5% in 1937-38 to 13.0% in 1986, while personal taxes went from 0.2% to 20.3%. (See Table 6.24.)

Recent surveys also indicate that food, clothing and health care account for a decreasing share of expenditures, while the shares taken by recreation and personal taxes are increasing.

Sources

Canada Employment and Immigration Commission.
Labour Canada.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *The Labour Force*, monthly. 71-001
- *Historical Labour Force Statistics, Actual Data, Seasonal Factors, Seasonally Adjusted Data*, annual. 71-201
- *Annual Report of the Minister of Supply and Services Canada under the Corporations and Labour Unions Returns Act. Part II, Labour Unions*, annual. 71-202
- *Labour Force Annual Averages*. 71-220
- *Women in the Workplace*: Selected Data, 1987. 71-534
- *Labour Force Research Series*, 1982-. 71-601
- *Employment, Earnings and Hours, Preliminary Data*, monthly. 72-002
- *Estimates of Labour Income*, quarterly. 72-005
- *Work Injuries*, annual. 72-208
- *Trusteed Pension Funds, Financial Statistics*, annual. 74-201
- *Pension Plans in Canada*, biennial. 74-401
- *Perspectives on Labour and Income*, quarterly. 75-001.

TABLES

LEGEND

. . *not available*
. . . *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*
e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

6.1 LABOUR FORCE CHARACTERISTICS[1] SELECTED YEARS, 1949-89

Year	Population '000	Labour force '000	Employed '000	Unemployed '000	Not in labour force '000	Participation rate %	Unemployment rate %	Employment/ population ratio
Both sexes								
1949[2]	9,268	5,055	4,913	141	4,213	54.5	2.8	53.0
1959	11,605	6,242	5,870	372	5,363	53.8	6.0	50.6
1969[3]	14,162	8,194	7,832	362	5,968	57.9	4.4	55.3
1979	17,702	11,231	10,395	836	6,472	63.4	7.4	58.7
1989	20,141	13,503	12,486	1,018	6,637	67.0	7.5	62.0
Males								
1949[2]	4,661	3,969	3,847	122	693	85.2	3.1	82.5
1959	5,785	4,687	4,363	325	1,098	81.0	6.9	75.4
1969[3]	6,983	5,465	5,230	235	1,518	78.3	4.3	74.9
1979	8,680	6,811	6,362	449	1,869	78.5	6.6	73.3
1989	9,814	7,525	6,977	548	2,289	76.7	7.3	71.1
Females								
1949[2]	4,606	1,086	1,066	20	3,520	23.6	1.8	23.1
1959	5,820	1,554	1,507	47	4,266	26.7	3.0	25.9
1969[3]	7,179	2,728	2,601	127	4,451	38.0	4.7	36.2
1979	9,022	4,420	4,033	387	4,602	49.0	8.8	44.7
1989	10,326	5,978	5,508	470	4,348	57.9	7.9	53.3

[1] *Annual averages.*
[2] *Excludes estimates for Newfoundland.*
[3] *Population aged 15 and over from 1966. Data prior to 1966 are based on population aged 14 and over.*

6.2 EMPLOYMENT AND UNEMPLOYMENT[1], BY AGE AND SEX, SELECTED YEARS, 1969-89

Age group and sex	1969	1974	1979	1984	1989
	Employed ('000)				
Total	7,832	9,125	10,395	10,932	12,486
Men	5,230	5,870	6,362	6,308	6,977
Women	2,601	3,255	4,033	4,624	5,508
Age 15-24	1,912	2,374	2,612	2,341	2,372
Men	1,052	1,310	1,410	1,207	1,234
Women	860	1,064	1,202	1,134	1,138
Age 25+	4,803	5,615	6,544	7,340	8,841
Men	3,368	3,752	4,106	4,268	4,917
Women	1,435	1,863	2,438	3,072	3,924
Age 55+	1,099[2]	1,116[2]	1,239	1,250	1,273
Men	811[2]	807[2]	847	832	826
Women	289[2]	309[2]	393	419	447
	Unemployed ('000)				
	1969	1974	1979	1984	1989
Total	362	514	836	1,384	1,018
Men	235	293	449	792	548
Women	127	221	387	592	470
Age 15-24	155	243	388	507	303
Men	96	139	214	290	175
Women	60	104	174	218	128
Age 25+	164	228	393	780	639
Men	106	125	199	436	322
Women	59	104	194	344	317
Age 55+	48[2]	45[2]	55	96	76
Men	42[2]	37[2]	36	66	51
Women	6[2]	8[2]	19	30	26

[1] *Annual averages.*

[2] *As published by the old Labour Force Survey. These estimates are not entirely comparable to the estimates produced after 1974 by the revised Labour Force Survey.*

6.3 EMPLOYMENT BY INDUSTRY, ANNUAL AVERAGES, SELECTED YEARS, 1949-89 (IN THOUSANDS)

Year	Agriculture	Other primary industries	Manufacturing	Construction	Transportation, communication and other utilities	Trade	Finance, insurance and real estate	Service	Public administration
1949[1]	1,077	193	1,297	316	416	651	144	822[2]	—
1959	700	197	1,496	443	520	947	216	1,350[2]	—
1969[3]	516	215	1,799	479	689	1,278	349	1,897	472
1979	484	275	2,071	644	903	1,808	554	2,954	701
1989	428	288	2,126	764	961	2,186	733	4,150	850

[1] *Excludes estimates for Newfoundland*

[2] *Includes public administration.*

[3] *Population aged 15 and over from 1966. Data prior to 1966 are based on population aged 14 and over.*

6.4 EMPLOYMENT AND PARTICIPATION RATE[1] BY PROVINCE, SELECTED YEARS, 1969-89

Province	Employed ('000)				
	1969	1974	1979	1984	1989
Newfoundland	127	149	170	174	201
Prince Edward Island	36	41	46	49	54
Nova Scotia	254	292	311	335	373
New Brunswick	190	221	243	247	284
Quebec	2,126	2,401	2,619	2,692	3,031
Ontario	2,979	3,523	3,993	4,235	4,949
Manitoba	371	419	450	470	498
Saskatchewan	339	350	411	436	446
Alberta	621	754	1,007	1,104	1,214
British Columbia	788	976	1,144	1,191	1,435
	Participation rate (%)				
	1969	1974	1979	1984	1989
Newfoundland	43.7	49.2	52.3	53.0	55.7
Prince Edward Island	54.4	55.4	59.0	60.5	65.0
Nova Scotia	52.8	55.8	56.6	59.4	61.2
New Brunswick	50.3	53.3	55.0	55.2	59.5
Quebec	55.9	58.0	60.2	61.5	64.0
Ontario	60.5	63.4	66.5	67.6	69.8
Manitoba	58.1	61.5	63.6	65.8	67.0
Saskatchewan	55.4	57.9	62.7	65.2	66.2
Alberta	63.4	65.6	69.7	71.9	72.4
British Columbia	58.2	60.3	63.2	64.1	66.8

[1] *Annual averages.*

6.5 PARTICIPATION AND UNEMPLOYMENT RATE[1] BY AGE AND SEX, SELECTED YEARS, 1969-89

Age group and sex	Participation rate (%)				
	1969	1974	1979	1984	1989
Total	57.9	60.5	63.4	64.8	67.0
Men	78.3	78.7	78.5	76.6	76.7
Women	38.0	43.0	49.0	53.6	57.9
Age 15-24	56.4	62.5	66.2	66.8	70.2
Men	62.7	68.9	71.3	69.8	73.0
Women	50.2	56.0	61.0	63.8	67.4
Age 25+	68.0	71.6	76.4	80.2	84.1
Men	95.6	95.4	95.1	93.4	93.8
Women	40.6	48.0	57.8	67.1	74.5
Age 55+	35.9[2]	32.5[2]	31.6	29.3	26.7
Men	56.4[2]	50.8	47.1	42.9	38.1
Women	17.6[2]	16.6[2]	18.6	17.9	17.1
	Unemployment rate (%)				
	1969	1974	1979	1984	1989
Total	4.4	5.3	7.4	11.2	7.5
Men	4.3	4.8	6.6	11.2	7.3
Women	4.7	6.4	8.8	11.3	7.9
Age 15-24	7.5	9.3	12.9	17.8	11.3
Men	8.3	9.6	13.2	19.3	12.4
Women	6.5	8.9	12.7	16.1	10.1
Age 25+	3.3	3.9	5.7	9.6	6.7
Men	3.0	3.2	4.6	9.3	6.1
Women	3.9	5.3	7.4	10.1	7.5
Age 55+	4.2[2]	3.9[2]	4.2	7.1	5.7
Men	4.9[2]	4.3[2]	4.1	7.4	5.8
Women	1.9[2]	2.5[2]	4.5	6.6	5.4

[1] *Annual averages.*

[2] *As published by the old Labour Force Survey. These estimates are not entirely comparable to estimates produced after 1974 by the revised Labour Force Survey.*

6.6 UNEMPLOYMENT AND UNEMPLOYMENT RATE[1] BY PROVINCE, SELECTED YEARS, 1969-89

Province	Unemployed ('000)					Unemployment rate (%)				
	1969	1974	1979	1984	1989	1969	1974	1979	1984	1989
Newfoundland	10	22	30	44	38	7.4	13.0	15.1	20.2	15.8
Prince Edward Island	[2]	[2]	6	7	11	[2]	[2]	11.2	12.8	14.1
Nova Scotia	13	21	35	50	41	4.9	6.8	10.1	13.0	9.9
New Brunswick	14	18	30	43	41	6.7	7.5	11.1	14.8	12.5
Quebec	137	169	278	396	311	6.1	6.6	9.6	12.8	9.3
Ontario	99	164	278	420	264	3.2	4.4	6.5	9.0	5.1
Manitoba	12	16	25	43	41	3.2	3.6	5.3	8.4	7.5
Saskatchewan	11	10	18	38	36	3.2	2.8	4.2	8.0	7.4
Alberta	22	27	41	138	94	3.4	3.5	3.9	11.1	7.2
British Columbia	42	64	95	206	144	5.0	6.2	7.6	14.7	9.1

[1] *Annual averages.*
[2] *Estimates less than 4,000*

6.7 CHANGE IN NUMBER OF EMPLOYED, BY OCCUPATION GROUP[1,2], 1984 AND 1989 (THOUSANDS)

Occupation	1984	1989	Percentage change 1984-89
Managerial, administrative	1,169	1,545	32.2
Natural sciences, engineering and mathematics	388	457	18.0
Social sciences	181	218	20.4
Religion	32	32	1.8
Teaching	473	528	11.7
Medicine and health	540	628	16.5
Art, literature and recreation	182	233	27.6
Clerical	1,876	2,090	11.4
Sales	1,043	1,171	12.2
Service	1,491	1,655	10.9
Farming, horticultural and animal-husbandry	497	435	−12.4
Fishing, hunting and trapping	32	37	15.5
Forestry and logging	64	55	−13.9
Mining and quarrying	63	61	−3.3
Processing	366	410	12.0
Machining	220	228	3.8
Product fabricating, assembling and repairing	942	1,050	11.5
Construction trades	568	744	31.1
Transport equipment operating	398	469	17.7
Material handling	261	281	7.8
Other crafts and equipment operating	144	155	7.5
All occupations	10,932	12,486	14.2

[1] *Annual averages.*
[2] *Standard Occupational Classification, 1980.*

6.8 UNION MEMBERSHIP IN CANADA, 1971-90[1]

Year	Union membership '000	Non-agricultural paid workers '000	Membership as a percentage of civilian labour force	Union membership as a percentage of non-agricultural paid workers
1971	2,231	6,880	26.6	32.4
1972	2,388	7,052	27.6	33.9
1973	2,591	7,327	29.1	35.4
1974	2,732	7,769	29.5	35.2
1975	2,884	8,102	29.9	35.6
1976	3,042	8,238	30.5	36.9
1977	3,149	8,400	30.9	37.5
1978	3,278	8,538	31.2	38.4
1979[2]				
1980	3,397	8,816	31.2	38.5
1981	3,487	9,495	30.1	36.7
1982	3,617	9,775	30.4	37.0
1983	3,563	9,402	29.9	37.9
1984	3,651	9,408	30.2	37.9
1985	3,666	9,626	29.8	38.1
1986	3,730	9,888	29.8	37.7
1987	3,782	10,219	29.7	37.0
1988	3,841	10,519	29.5	36.5
1989	3,944	10,891	29.7	36.2
1990	4,031	11,147	29.9	36.2

[1] *The data for the years prior to 1971 are contained in the 1976-77 report or previous editions.*

[2] *No survey was conducted in 1979.*

6.9 MAJOR WORK STOPPAGES INVOLVING 500 OR MORE WORKERS, 1981-89

Period	Number beginning during month or year	Work stoppages in existence during month or year			Percentage of estimated working time
		Number	Workers involved	Person-days not worked	
1981	92	100	240,972	6,169,670	0.25
1982	67	67	389,985	3,859,810	0.16
1983	59	61	279,826	2,882,110	0.12
1984	64	67	130,852	2,331,350	0.10
1985	52	56	98,252	1,348,760	0.05
1986	85	88	429,401	5,651,700	0.22
1987	59	64	532,659	2,402,662	0.09
1988	52	53	160,962	3,410,630	0.12
1989	66	67	406,146	2,080,980	0.07
1989					
July	9	14	15,504	113,220	0.05
August	2	6	9,119	65,790	0.03
September	9	11	257,711	797,820	0.34
October	5	6	27,749	126,950	0.05
November	3	7	32,850	195,520	0.08
December	—	4	18,950	68,420	0.03
1990					
January	—	2	15,300	28,960	0.01
February	3	4	18,100	38,600	0.02
March	5	8	19,538	51,630	0.02
April	7	10	111,095	162,230	0.07
May	12	16	41,944	477,860	0.20
June	7	12	41,712	671,110	0.28
July	5	12	37,931	162,510	0.07

6.10 EFFECTIVE WAGE INCREASES[1] IN BASE RATES

Sector	1987 %	1988 %	1989 %	1989 3rd quarter	 4th quarter	1990 1st quarter	 2nd quarter
All industries							
Agreements without COLA	3.8	4.4	5.3	6.1	5.7	6.2	6.0
Agreements with COLA	4.3	4.3	5.3	6.1	5.3	6.0	5.0
All agreements	4.1	4.4	5.3	6.1	5.5	6.2	5.5
Commercial sector							
Agreements without COLA	3.5	4.7	5.2	4.4	5.4	5.6	5.8
Agreements with COLA	4.3	4.4	4.8	5.1	5.6	6.0	5.4
All agreements	3.9	4.6	5.1	4.5	5.5	5.7	5.7
Non-commercial sector							
Agreements without COLA	4.1	4.1	5.4	7.1	5.9	6.6	6.2
Agreements with COLA	4.3	4.1	5.6	6.3	5.1	6.0	4.9
All agreements	4.2	4.1	5.4	6.8	5.4	6.4	5.3

[1] *Cost of Living Adjustments (COLA) formulae are quantified using a combination of the latest Consumer Price Index (CPI) data available and/or a projected CPI of 5%.*

6.11 HELP-WANTED INDEX, SEASONALLY ADJUSTED, ANNUAL AVERAGES 1982-89 AND BY MONTH 1988 AND 1989 (1981 = 100)

Year and month	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada
1982	71	57	59	47	45	55
1983	73	66	59	43	43	57
1984	93	86	83	50	48	75
1985	106	97	111	61	53	91
1986	123	121	130	64	67	108
1987	158	156	168	69	80	137
1988	180	173	180	81	95	151
1989	196	173	167	90	128	152
1988						
January	174	169	183	77	85	149
February	165	181	185	75	88	151
March	178	174	176	79	93	149
April	194	168	181	81	81	148
May	181	171	184	82	80	149
June	168	171	185	84	97	152
July	174	176	176	78	97	149
August	185	179	185	84	103	159
September	177	167	178	84	104	150
October	185	172	178	85	104	152
November	184	181	180	76	102	153
December	192	163	167	82	104	144
1989						
January	197	163	183	85	112	153
February	203	180	175	90	120	155
March	189	179	180	90	123	158
April	200	187	176	90	129	160
May	189	173	168	88	131	152
June	232	178	167	87	130	156
July	213	171	161	90	131	152
August	181	176	159	92	132	154
September	204	177	161	93	128	153
October	190	168	171	91	129	152
November	182	160	154	91	139	144
December	164	153	150	89	132	137

6.12 WORKING CONDITIONS OF EMPLOYEES IN ALL INDUSTRIES[1], 1989

Item	Agreements		Employees	
	No.	%	No.	%
Hours of work				
Less than 35 hours	22	2.0	30,581	1.2
35 hours	106	9.6	336,356	13.7
Over 35 and under 37½ hours	82	7.4	213,311	8.7
37½ hours	143	12.9	385,579	15.7
Over 37 ½ and under 40 hours	50	4.5	321,670	13.1
40 hours	500	45.1	878,109	35.7
Over 40 hours	38	3.4	56,310	2.3
No provision	167	15.1	237,177	9.6
Total	1,108	100.0	2,459,093	100.0
Paid holidays				
Less than 10 days	65	5.9	179,210	7.3
10 and 10½ days	108	9.7	184,132	7.5
11 days	369	33.3	858,036	34.9
More than 11 days and less than 30 days	400	36.1	936,301	38.1
More than 30 days	1	0.1	2,000	0.1
No provision	165	14.9	299,414	12.2
Total	1,108	100.0	2,459,093	100.0
Vacations with pay[2] (number of weeks and service required)				
3 weeks — with service:				
Less than 3 years	391	35.3	859,504	35.0
3 to 5 years	380	34.3	569,089	23.1
6 to 10 years	15	1.4	18,740	0.8
No provision	322	29.1	1,011,760	41.1
4 weeks — with service:				
Less than 10 years	525	47.4	1,454,299	59.1
10 years	214	19.3	372,527	15.1
After 10 years and less than 20	91	8.2	101,205	4.1
After 20 years	1	0.1	800	—
No provision	277	25.0	530,262	21.6
5 weeks — with service:				
Less than 20 years	475	42.9	865,222	35.2
20 years	217	19.6	464,766	18.9
After 20 years and less than 30	89	8.0	448,891	18.3
After 30 years and less than 34	2	0.2	1,800	0.1
After 34 years	1	0.1	550	—
No provision	324	29.2	677,864	27.6
6 weeks — with service:				
Less than 25 years	185	16.7	369,714	15.0
After 25 years and less than 35	368	33.2	723,943	29.4
After 35 years	4	0.4	2,724	0.1
No provision	551	49.7	1,362,712	55.4
7 weeks — with service:				
Less than 25 years	26	2.3	79,425	3.2
After 25 years and less than 35	70	6.3	105,077	4.3
After 35 years	15	1.4	32,775	1.3
No provision	997	90.0	2,241,816	91.2
8 weeks — with service:				
After 1 year	3	0.3	12,653	0.5
After 4 years	1	0.1	720	—
After 21 years	1	0.1	1,200	—
After 24 years	4	0.4	43,200	1.8
After 34 years	1	0.1	500	—
After 40 years	2	0.2	1,170	—
No provision	1,096	98.9	2,399,650	97.6

[1] *Agreements covering 500 employees or more in all industries in Canada*

[2] *Legislation in all jurisdictions in Canada entitles employees to at least 2 weeks annual vacation with pay generally after 1 year of employment.*

6.13 NUMBER OF ACCEPTED TIME-LOSS INJURIES, 1984-88

Province or territory	1984	1985	1986	1987	1988
Newfoundland	8,223	8,743	8,624	9,047	10,066
Prince Edward Island	1,495	1,787	1,935	2,068	2,435
Nova Scotia	11,940	12,624	12,620	11,732	11,219
New Brunswick	9,704	8,986	9,909	10,918	12,119
Quebec	176,001	194,377	213,366	216,724	218,057
Ontario	167,748	186,648	195,937	205,259	208,499
Manitoba	21,358	22,440	23,495	22,510	22,612
Saskatchewan	15,700	16,666	15,916	15,715	14,888
Alberta	37,665	41,376	42,249	41,236	43,349
British Columbia	59,319	61,146	61,711	66,200	73,418
Northwest Territories	1,164	1,198	956	1,122	1,335
Total	510,317	555,991	586,718	602,531	617,997

6.14 WORK INJURY COSTS[1], 1989p (IN CURRENT THOUSAND DOLLARS)

Province or territory	Medical aid	Hospitalization/ rehabilitation	Funeral	Pension	Compensation for lost earnings	Total payments	Total claims
Newfoundland	12,397	19,975	6,953	24,243	30,272	93,840	21,646
Prince Edward Island	1,366	1,138	8	2,400	3,368	8,280	4,601
Nova Scotia	20,781	3,800	..	22,022	39,731	86,334	48,574
New Brunswick	3,834	13,419	8	16,317	26,392	59,970	41,378
Quebec	74,650	86,081	589	340,924	505,413	1,007,657	251,557
Ontario	211,625	130,655		555,410	750,640	1,682,380	417,239
Manitoba	13,758	9,398	21	25,639	46,770	95,586	39,204
Saskatchewan	15,358	1,808	[2]	25,367	41,015	83,548	33,319
Alberta	53,793	[2]	240	120,243	147,846	322,122	58,022
British Columbia	58,468	31,741	969	146,591	173,549	411,318	153,545
Yukon	564	86		1,132	1,029	2,811	1,472
Northwest Territories	1,770	780	13	5,708	1,859	10,130	3,548
Canada	468,364	298,881	8,800	1,285,996	1,767,884	3,863,975	1,074,105

Note: Not available, value could be included in medical aid.

[1] *All cost figures are taken from Workers' Compensation Board annual reports.*

[2] *Included in medical aid*

6.15 WORK INJURIES, 1979-89p

Year	Number of employees ('000)	Injuries				
		Disabling	Fatal		Non-disabling	All
			Compensated	Reported		
1979	8,834	536,387	944	1,198	630,118	1,167,449
1980	9,034	566,949	967	1,252	648,272	1,216,188
1981	9,340	584,443	967	1,175	622,208	1,207,618
1982	9,039	518,751	861	1,201	496,437	1,016,049
1983	8,767	490,463	718	970	462,704	953,885
1984	8,902	524,948	744	889	510,652	1,036,344
1985	9,209	570,616	733	932	504,424	1,075,773
1986	9,845	598,424	762	894	474,624	1,073,810
1987	10,081	612,127	796	1,090	421,564	1,034,487
1988	10,286	642,849	867	1,148	446,522	1,090,238
1989p	10,528	656,503	869	1,164	417,011	1,074,383

Note: In some instances the number of compensated cases may exceed the number of reported cases because cases reported in a particular year may not be settled until subsequent years.

6.16 UNEMPLOYMENT INSURANCE CLAIMS AND AVERAGE PAYMENTS, 1984-89 AND BY MONTH, 1988 AND 1989

Year and month	Activity				
	Persons covered by Unemployment Insurance[1] '000	Claims data ('000)		Benefit data	
		Beneficiaries[2]	Initial and renewal claims received	Number of weeks paid '000	Average weekly payment $
1984	11,526	3,222	3,492	61,862	161.42
1985	11,891	3,181	3,312	59,788	171.05
1986	12,191	3,137	3,353	58,063	181.07
1987	12,522	3,080	3,221	54,875	190.26
1988	12,891	3,016	3,231	53,527	202.75
1989		3,025	3,215	53,399	215.88
1988					
January	11,908	1,213	309	5,209	202.09
February	12,033	1,225	229	5,219	205.48
March	12,055	1,208	248	5,769	204.85
April	12,083	1,145	213	4,708	204.08
May	12,286	987	217	4,723	201.01
June	12,439	892	241	4,000	196.24
July	12,517	874	280	3,492	196.21
August	12,567	927	238	4,418	198.67
September	12,131	823	265	3,621	199.43
October	12,171	860	294	3,632	202.05
November	12,215	945	371	4,140	206.04
December	12,292	1,078	325	4,593	212.92
1989					
January	12,181	1,233	339	5,447	216.58
February	12,222	1,246	218	5,088	217.77
March	12,311	1,229	236	5,263	217.74
April	12,264	1,175	219	4,908	217.32
May	12,473	1,005	216	5,028	214.19
June	12,636	905	231	3,939	209.02
July	12,711	870	272	3,650	209.23
August	12,759	921	227	4,372	212.07
September	12,271	814	245	3,462	212.50
October	12,316	862	312	3,850	214.97
November	12,377	982	366	3,938	218.95
December	12,403	1,101	333	4,453	226.98

[1] *The annual data are estimates of persons who, during the year, contributed toward the Unemployment Insurance program. The monthly estimates are derived by adding to the "employed paid workers" the strength of the Armed Forces and the number of beneficiaries.*

[2] *The annual estimates represent unduplicated counts of all persons who, during the course of a calendar year, received unemployment insurance benefits.*

6.17 UNEMPLOYMENT INSURANCE BENEFITS BY TYPE, 1984-89 AND BY MONTH, 1989 (THOUSAND DOLLARS)

Year and month	Benefits paid								
	Regular	Sickness	Parental[1]	Retirement	Fishing	Training	Work sharing	Job creation	Total
1984	8,825,126	204,559	398,989	19,158	163,372	226,846	32,389	115,186	9,985,625
1985	8,975,315	220,770	436,376	22,399	179,767	234,529	25,190	132,612	10,226,888
1986	9,209,882	242,065	476,693	21,802	208,515	236,933	21,653	96,014	10,513,557
1987	9,076,420	278,693	510,791	23,110	223,321	223,776	16,979	87,619	10,440,709
1988	9,309,381	325,159	571,384	19,190	270,062	238,219	16,828	102,178	10,852,401
1989	9,846,725	356,501	637,109	26,046	269,648	269,041	21,138	101,829	11,528,036
January	1,024,798	28,952	48,318	3,451	45,870	22,825	1,747	3,775	1,179,736
February	959,647	27,650	44,082	3,494	39,673	28,155	2,218	3,103	1,108,022
March	988,075	33,403	47,096	2,391	41,307	28,054	2,368	3,351	1,146,046
April	914,080	29,495	49,393	2,073	38,472	27,302	2,015	3,848	1,066,678
May	922,672	31,148	56,083	2,163	32,051	25,290	1,876	5,777	1,077,061
June	705,125	29,746	56,002	1,920	2,130	19,918	1,671	6,868	823,381
July	655,438	27,098	53,140	1,527	3,076	12,488	1,334	9,509	763,610
August	800,045	31,731	63,621	2,043	3,826	11,889	1,065	12,968	927,187
September	621,185	28,116	54,688	1,785	3,253	13,113	1,094	12,417	735,651
October	690,433	29,483	59,052	1,925	3,891	25,864	1,505	15,595	827,748
November	720,911	30,740	55,867	1,862	10,968	26,011	1,933	13,946	862,239
December	844,316	28,940	49,768	1,412	45,130	28,131	2,311	10,670	1,010,677

[1] *Parental includes persons receiving maternity, paternity or adoption benefits.*

6.18 AVERAGE INCOMES OF FAMILIES IN CURRENT AND CONSTANT (1989) DOLLARS, SELECTED YEARS, 1981-89

Province	Current dollars							
	1981^{r}	1982^{r}	1984^{r}	1985^{r}	1986^{r}	1987	1988	1989
Newfoundland	25,870	27,301	28,635	30,576	30,383	33,710	36,076	39,648
Prince Edward Island	23,455	26,098	29,627	31,058	32,029	34,792	34,535	38,726
Nova Scotia	24,862	27,479	31,411	34,640	35,352	38,141	39,671	43,123
New Brunswick	24,608	27,051	30,700	32,092	33,313	35,231	37,308	40,670
Quebec	28,568	30,796	34,376	35,748	38,110	40,113	41,328	44,860
Ontario	32,322	34,821	39,244	42,391	45,778	48,967	52,764	57,330
Manitoba	28,606	31,450	34,813	36,140	37,875	39,709	43,121	46,551
Saskatchewan	30,575	32,657	34,093	35,715	37,025	39,119	40,357	42,978
Alberta	36,279	40,578	38,084	41,823	43,729	44,388	46,283	49,734
British Columbia	33,687	35,559	36,462	38,499	40,590	42,639	45,264	49,442
Canada	30,973	33,473	36,384	38,780	41,240	43,604	46,185	50,083

	Constant dollars							
	1981^{r}	1982^{r}	1984^{r}	1985^{r}	1986^{r}	1987	1988	1989
Newfoundland	39,064	37,206	35,355	36,297	34,651	36,832	37,882	39,648
Prince Edward Island	35,417	35,567	36,580	36,869	36,529	38,014	36,264	38,726
Nova Scotia	37,542	37,449	38,782	41,121	40,318	41,674	41,657	43,123
New Brunswick	37,158	36,866	37,904	38,097	37,993	38,494	39,176	40,670
Quebec	43,138	41,969	42,443	42,437	43,464	43,828	43,397	44,860
Ontario	48,806	47,455	48,453	50,323	52,209	53,502	55,406	57,330
Manitoba	43,195	42,861	42,983	42,902	43,196	43,387	45,280	46,551
Saskatchewan	46,168	44,505	42,094	42,398	42,226	42,742	42,378	42,978
Alberta	54,781	55,300	47,021	49,648	49,872	48,499	48,600	49,734
British Columbia	50,867	48,460	45,018	45,702	46,292	46,588	47,530	49,442
Canada	46,769	45,617	44,923	46,036	47,033	47,642	48,498	50,083

6.19 PERCENTAGE DISTRIBUTION OF FAMILIES, SHOWING AVERAGE AND MEDIAN[1] INCOMES, IN CONSTANT (1989) DOLLARS, SELECTED YEARS, 1981-89

Income group		1981^{r}	1983^{r}	1984^{r}	1985^{r}	1986^{r}	1987	1988	1989
Under $10,000		3.4	3.9	4.1	3.4	3.1	3.1	2.7	2.4
$10,000 - $19,999		12.1	14.4	14.4	13.7	13.4	12.8	12.3	11.9
20,000 - 29,999		13.9	15.0	14.6	15.0	14.7	14.8	14.4	13.4
30,000 - 39,999		16.0	17.0	16.1	15.8	15.6	15.6	15.8	15.4
40,000 - 49,999		16.2	15.0	15.9	15.3	15.3	15.1	14.1	15.2
50,000 - 59,999		13.5	11.7	12.0	12.2	12.4	12.3	13.1	12.6
60,000 - 74,999		12.1	11.5	11.3	12.0	12.3	12.0	12.5	13.0
75,000 and over		12.8	11.5	11.6	12.5	13.2	14.3	14.9	16.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	$	46,769	44,915	44,923	46,036	47,033	47,642	48,498	50,083
Median income	$	42,757	39,850	40,455	41,201	42,049	42,445	43,241	44,460
Standard error of average income	$	264	291	289	321	405	375	348	368

[1] *Median income refers to the middle or central value when incomes are ranged in order of magnitude. Median income is lower than average income in these tables since it is not as affected by a few abnormally large values in the distribution.*

6.20 PERCENTAGE DISTRIBUTION OF FAMILIES BY INCOME GROUP, 1989

Income group		Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Under $10,000		3.8	3.2	2.8	3.7	2.5	1.6	2.0	4.0	3.3	2.6	2.4
$10,000 - $14,999		6.1	6.5	7.2	6.9	6.1	2.8	4.6	5.4	4.1	4.7	4.5
15,000 - 19,999		11.5	11.2	9.3	8.6	8.5	5.7	8.6	9.5	7.5	7.4	7.4
20,000 - 24,999		8.8	10.6	7.9	8.8	6.9	5.7	7.6	9.1	6.0	5.2	6.4
25,000 - 29,999		9.0	10.9	9.5	9.7	7.8	5.9	8.8	7.2	6.0	6.5	7.0
30,000 - 34,999		9.6	8.4	8.5	9.9	8.4	5.9	8.0	9.4	7.0	7.3	7.3
35,000 - 39,999		9.3	8.9	8.9	8.9	9.4	6.8	8.8	8.7	8.3	7.7	8.1
40,000 - 44,999		8.7	8.7	7.1	8.3	8.8	7.4	6.2	6.3	8.0	7.0	7.7
45,000 - 49,999		7.2	6.9	6.9	6.9	7.7	7.6	7.1	6.5	6.9	7.7	7.5
50,000 - 54,999		6.5	5.7	5.4	6.0	6.8	6.4	6.8	6.4	6.2	7.1	6.6
55,000 - 59,999		4.5	5.2	4.6	4.0	5.6	6.6	5.5	5.8	6.0	6.7	6.0
60,000 - 64,999		2.6	4.2	4.2	4.3	4.1	5.9	5.1	4.4	5.3	5.5	5.1
65,000 - 69,999		3.0	1.5	3.4	2.8	3.9	4.8	4.9	3.7	5.1	5.2	4.4
70,000 - 74,999		2.3	2.6	2.6	2.6	2.7	4.1	3.1	3.0	3.4	4.7	3.5
75,000 - 79,999		1.1	0.6	2.3	2.3	2.0	3.5	2.0	2.1	3.1	3.0	2.8
80,000 - 89,999		2.8	2.1	3.4	3.1	3.3	6.0	4.2	2.9	4.2	4.1	4.5
90,000 - 99,999		1.2	1.0	2.5	0.9	1.7	3.9	2.0	2.3	3.4	2.9	2.8
100,000 and over		2.2	1.8	3.4	2.2	3.8	9.3	4.6	3.4	6.1	4.7	6.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	$	39,648	38,726	43,123	40,670	44,860	57,330	46,551	42,978	49,734	49,442	50,083
Median income	$	35,652	34,548	37,649	36,344	40,187	50,464	41,257	38,068	44,867	46,028	44,460
Number of records[1]		1,752	694	2,067	1,841	5,671	8,121	1,956	2,174	2,704	2,563	29,543
Estimated numbers of families	'000	149	34	235	195	1,880	2,596	279	259	648	813	7,089
Standard error of average income	$	778	886	959	622	636	837	764	731	653	697	368

[1] *Sample size.*

6.21 ESTIMATED INCIDENCE AND PERCENTAGE DISTRIBUTION OF LOW-INCOME[1] AND ALL OTHER FAMILIES AND UNATTACHED INDIVIDUALS, 1989 (1978 BASE)

Selected characteristics	Families			Unattached individuals		
	Incidence of low income[2]	Percentage distribution of		Incidence of low income[2]	Percentage distribution of	
		Low income	All other		Low income	All other
All families and unattached individuals	9.6	100.0	100.0	30.5	100.0	100.0
Estimated numbers ('000)	682	682	6,408	974	974	2,225
By province of residence						
Atlantic provinces	11.7	10.6	8.5	34.8	7.1	5.8
Newfoundland	12.8	2.8	2.0	32.0	1.0	1.0
Prince Edward Island	9.0	0.5	0.5	35.1	0.5	0.4
Nova Scotia	11.4	3.9	3.3	34.7	3.2	2.6
New Brunswick	11.9	3.4	2.7	36.3	2.4	1.8
Quebec	11.4	31.4	26.0	41.0	36.9	23.2
Ontario	7.0	26.8	37.7	23.5	26.9	38.3
Prairie provinces	11.3	19.8	16.4	30.4	17.2	17.2
Manitoba	11.0	4.5	3.9	30.0	4.1	4.2
Saskatchewan	12.6	4.8	3.5	30.4	3.6	3.6
Alberta	11.0	10.5	9.0	30.7	9.4	9.3
British Columbia	9.7	11.5	11.5	25.2	11.9	15.5
By size of area of residence						
Urban areas 500,000 and over	10.0	46.1	44.3	32.2	56.8	52.3
Urban areas 100,000 - 499,999	10.0	14.8	14.2	30.3	14.7	14.8
Urban areas 30,000 - 99,999	10.0	9.8	9.3	34.3	10.1	8.5
Urban areas under 30,000	9.3	12.5	13.0	27.9	11.8	13.4
Rural areas	8.5	16.8	19.1	20.7	6.6	11.1
By tenure						
Owners	5.2	39.6	76.9	17.7	16.9	34.5
With mortgage	4.7	18.5	39.9	12.0	3.8	12.4
Without mortgage	5.7	21.2	37.1	20.6	13.1	22.1
Renters[3]	21.8	60.4	23.1	35.7	83.1	65.5
By age of head						
24 years and under	25.1	9.1	2.9	45.0	19.6	10.5
25 - 34 years	13.0	30.3	21.6	17.6	13.8	28.1
35 - 44 "	9.6	26.1	26.1	20.5	9.4	16.1
45 - 54 "	6.5	12.6	19.4	26.7	8.0	9.6
55 - 64 "	8.2	12.7	15.1	38.0	13.9	10.0
65 - 69 "	7.8	4.8	6.1	33.8	7.6	6.5
70 years and over	5.2	4.6	8.9	38.6	27.7	19.3
By sex and age of head						
Males						
Under 65 years	7.0	55.5	78.7	24.1	30.3	41.7
65 years and over	5.8	7.7	13.3	26.9	6.3	7.5
Females						
Under 65 years	36.9	35.1	6.4	31.7	34.4	32.5
65 years and over	9.6	1.6	1.6	41.0	29.0	18.3
By family characteristics						
Married couples only	5.9	19.4	32.6	...	100.0	100.0
Married couples with single children only	7.3	38.1	51.9	...	...	...
Married couples with children and/or other relatives	4.4	1.9	4.5	...	...	...
Lone-parent families						
Male head	12.4	1.8	1.4	...	...	...
Female head	39.0	33.2	5.5	...	...	...
All other families	12.5	5.6	4.2	...	...	...
By number of children under 18 years						
None	5.9	30.7	52.5	30.5	100.0	100.0
One child	13.1	27.1	19.2	...	...	...
Two children	12.6	27.4	20.2	...	...	...
Three or more children	16.2	14.9	8.2	...	...	...

6.21 ESTIMATED INCIDENCE AND PERCENTAGE DISTRIBUTION OF LOW-INCOME[1] AND ALL OTHER FAMILIES AND UNATTACHED INDIVIDUALS, 1989 (1978 BASE) (concluded)

Selected characteristics	Families			Unattached individuals		
	Incidence of low income[2]	Percentage distribution of		Incidence of low income[2]	Percentage distribution of	
		Low income	All other		Low income	All other
By employment status of head						
In labour force	6.6	52.3	78.4	17.8	33.8	68 5
Not in labour force	19.0	47.7	21.6	47.9	66.2	31 5
By size of family unit						
One person				30.5	100.0	100.0
Two persons	9.4	38.6	39.3			
Three persons	11.6	27.8	22.6			
Four persons	7.8	19.5	24.6			
Five or more persons	10.0	14.2	13.5			

[1] *Estimates based on low-income cutoffs, 1978 base.*

[2] *Percentage of families and unattached individuals with income below the low-income cutoffs.*

[3] *Includes roomers, lodgers and families and unattached individuals who receive free lodging or who reside with employers.*

6.22 INCIDENCE OF LOW INCOME AMONG PERSONS BY AGE AND FAMILY UNIT TYPE, 1980-89

Family unit type	Incidence of low income									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Persons — total	14.2	14.0	15.4	17.0	16.8	15.6	14.5	14.1	13.1	12.2
Children under 16	14.8	15.6	18.3	19.2	20.1	18.6	17.0	16.9	15.4	14.6
Elderly, 65 and over	27.7	26.3	23.8	25.4	21.6	20.1	18.9	17.3	17.2	15.9
All others	12.1	11.8	13.3	15.0	14.9	13.9	13.0	12.6	11.7	10.7
Persons in families — total	11.3	11.3	12.8	14.0	14.2	12.8	11.8	11.4	10.3	9.6
Children under 16	14.8	15.6	18.3	19.2	20.1	18.6	17.0	16.9	15.4	14.6
Elderly, 65 and over	11.9	11.4	9.6	10.0	9.3	8.2	8.1	7.1	6.9	5.3
All others	9.8	9.5	11.0	12.4	12.4	11.2	10.3	9.8	8.8	8.2
Unattached individuals — total	39.1	37.5	37.1	41.9	37.7	36.9	34.6	33.5	33.1	30.5
Elderly, 65 and over	61.9	57.7	55.6	58.4	49.4	47.4	43.0	39.4	38.8	37.5
All others	30.2	29.4	30.2	35.4	33.4	33.0	31.4	31.3	30.9	27.6

6.23 PATTERNS OF FAMILY EXPENDITURES, SELECTED YEARS, 1969, 1978 AND 1986

Item	1969	1978	1986	1986							
				Lowest income quintile	Highest income quintile	Two person married-couple families by age of husband		Urban 500,000+	All rural	One person	Multi-person
						Less than 45 years	65 years and over				
Number of families in sample	15,140	9,370	10,360	2,118	1,901	812	772	3,754	1,224	2,398	7,958
Estimated number of families ('000)	6,008	7,568	8,849	1,770	1,770	619	610	4,222	1,552	2,057	6,793
Average											
Family size	3.31	2.93	2.72	1.60	3.59	1.98	2.00	2.63	3.02	1.00	3.24
Age of head[1]	47	46	47	57	45	30	72	45	49	53	45
Family income ($)	8,079	19,583	35,665	9,690	73,922	41,346	24,207	39,064	30,832	17,989	41,016
Other money receipts ($)	101	359	878	784	1,147	925	329	927	732	548	979
Change in assets and liabilities ($)	129	1,221	1,489	−825	7,950	1,783	1,059	1,646	1,486	460	1,801
Percentage											
Homeowners	58.6	63.3	60.1	34.1	86.7	47.8	76.4	51.1	84.7	30.4	69.1
Automobile owners	72.1	78.2	78.8	40.5	96.1	88.5	85.1	74.0	89.3	49.9	87.6
Total expenditures ($)	8,131	18,728	35,179	11,414	66,910	40,648	23,123	38,486	30,176	18,248	40,306
	Percentage share										
Food	18.9	17.0	14.2	21.7	11.8	11.8	16.1	13.9	15.4	14.1	14.3
Food from restaurant	2.9	3.1	3.5	2.9	3.6	4.6	2.6	4.0	2.9	4.5	3.4
Shelter	15.8	16.5	16.1	28.9	12.7	16.1	18.2	16.7	14.2	21.9	15.4
Household operation	3.8	3.9	4.3	6.1	3.9	3.4	4.4	4.1	4.9	4.2	4.3
Household furnishings	4.1	4.4	3.6	3.4	3.6	4.1	3.9	3.3	4.2	3.1	3.7
Clothing	8.8	7.2	6.3	5.5	6.7	6.4	5.0	6.4	6.4	5.3	6.4
Transportation	12.5	13.0	13.2	9.5	12.9	13.5	16.4	12.5	15.3	10.3	13.6
Operation of automobiles and trucks	5.9	6.1	6.1	5.2	5.4	6.2	6.9	5.5	8.0	4.8	6.3
Health care	3.4	2.0	1.8	2.4	1.5	1.5	2.4	1.8	2.2	2.0	1.8
Personal care	2.1	1.7	1.9	2.6	1.7	1.8	1.9	1.9	1.9	1.8	1.9
Recreation	4.1	5.1	5.0	4.0	5.2	5.3	4.5	4.8	5.4	4.8	5.1
Reading materials	0.6	0.6	0.6	0.8	0.5	0.6	0.8	0.6	0.6	0.8	0.6
Education	0.9	0.6	0.8	0.8	1.1	0.6	0.0	1.0	0.6	0.4	0.9
Tobacco products and alcohol	3.8	3.3	3.2	4.5	2.4	3.6	2.6	3.1	3.5	4.1	3.1
Miscellaneous	1.6	2.5	2.6	2.4	2.5	2.6	1.7	2.4	2.8	2.5	2.6
Total current consumption	80.4	77.7	73.9	92.5	66.4	71.2	77.9	72.5	77.4	75.4	73.7
Personal taxes	12.6	15.5	18.5	2.3	25.4	21.3	12.4	20.1	15.3	15.4	18.9
Security	4.4	4.2	4.5	1.0	5.1	4.9	1.9	4.5	4.1	3.4	4.6
Gifts and contributions	2.7	2.5	3.2	4.3	3.2	2.6	7.8	2.9	3.2	5.9	2.8
Total expenditures	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] *Age of husband in the married couples columns.*

6.24 COMPARISON EXPENDITURE PATTERNS, 1937-38 AND 1986, FOR URBAN WAGE EARNER MARRIED-COUPLE FAMILIES WITH ONE TO FIVE CHILDREN[1]

Item	1937-38	1986
Food	28.8	14.2
Shelter	25.6	15.7
Household operation	2.9	4.4
Household furnishings	5.5	3.6
Clothing	10.7	6.5
Transportation	5.5	13.0
Health care	4.2	1.6
Personal care	1.6	2.0
Recreation	2.7	4.9
Reading materials	0.9	0.5
Education	1.0	1.0
Tobacco products and supplies	1.6	1.2
Alcoholic beverages	[2]	1.4
Miscellaneous	0.6	2.3
Personal taxes	0.2	20.3
Security	6.0	5.3
Gifts and contributions	2.3	1.9
Total expenditures	100.0	100.0

[1] *The 1937-38 sample restricted incomes to those between $450 and $2,500. The equivalent income restrictions for 1986 were (approximately) $26,400 to $80,600.*

[2] *The 1937-38 study nowhere mentions alcoholic beverages. Alcoholic beverages are however included in Personal Expenditures as part of the National Accounts. These indicate expenditures similar in magnitude to tobacco products.*

Sources

Labour Canada.

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United Church Archives/National Archives of Canada/C 74897

HOUSING

7.1 INTRODUCTION

THE QUALITY OF HOUSING in Canada is among the highest in the world, and a majority of Canadians own their homes.

At the time of the 1986 Census, 62% of all private dwellings in Canada were occupied by their owners, almost half of whom had no mortgage. This ownership rate had been stable nationally for more than a decade, but regional rates varied from about 28% in the Northwest Territories to almost 80% in Newfoundland.

The 1986 Census enumerated just over 9 million occupied dwellings in Canada, up from 8.3 million in 1981. Of these, 58% were single-family detached, 32% low density multiple housing, 9% high-rise, and 1% mobile homes and other movable dwellings.

The 1981-86 increase was much less than the 16% average for the periods between the four previous censuses. This was largely the result of slow population growth in the 1980s and the maturing of "baby-boomers," many of whom first established households in the 1970s.

The 1986 Census showed that about 65% of Canada's housing had been built since World War II. During the Great Depression and the war years, construction averaged only 39,000 units per year; in the 1950s, it rose to 77,000 units annually, climbing to 155,000 in the 1960s and to 219,000 in the 1970s.

The 1981-82 recession, coupled with a drop in the number of young families entering the housing market, caused housing starts to drop — for example, only 184,000 units were built in 1986. The market began to boom again in the late 1980s, only to be struck hard by the 1990 recession.

Public Works/National Archives of Canada/PA 46515

An early renovation of a public building in Smiths Falls, Ontario, 1914.

GOVERNMENT HOUSING PROGRAMS — ENSURING QUALITY AND EQUITY

Canadian housing policies aim to ensure that dwellings of a high standard are available to all Canadians at prices they can afford. To this end, a wide range of government programs offer financial support to home builders and home buyers.

Housing programs exist at all levels of government, although the provinces have constitutional responsibility for housing. In practice, the provinces often delegate housing responsibility to regional and city governments. Local governments are also generally responsible for enforcing housing standards, and for land-use planning and policies.

This chapter gives an overview of Canada's housing market in the late 1980s, as well as 1986 Census information on housing and recent data on combined residential and non-residential construction. Government programs and policies are also discussed.

7.2 HOUSING STARTS

In 1989, housing starts in Canada exceeded 200,000 units for the third consecutive year, surprising most industry analysts and forecasters. Sales of existing units fared even better,

FOR A ROOF OVER YOUR HEAD...

The cost of a home in Canada has been rising consistently over the years. In the three major urban centres, the cost is at least five times what it was 20 years ago.

For example, in 1970, the price tag on a single or semi-detached Montreal home was about $19,000. Today, it might run about $140,000.

In Toronto, in 1970, a similar style of house cost about $37,000. Today, it might cost just under $460,000 — nearly a half a million. In Vancouver, in 1970, a single or semi-detached might have averaged just under $30,000. Today, it would be just under $400,000.

However, for most Canadians, the dream of home-ownership is still extremely strong. Indeed, the majority of Canadians own their home.

National Film Board/National Archives of Canada/PA-112890

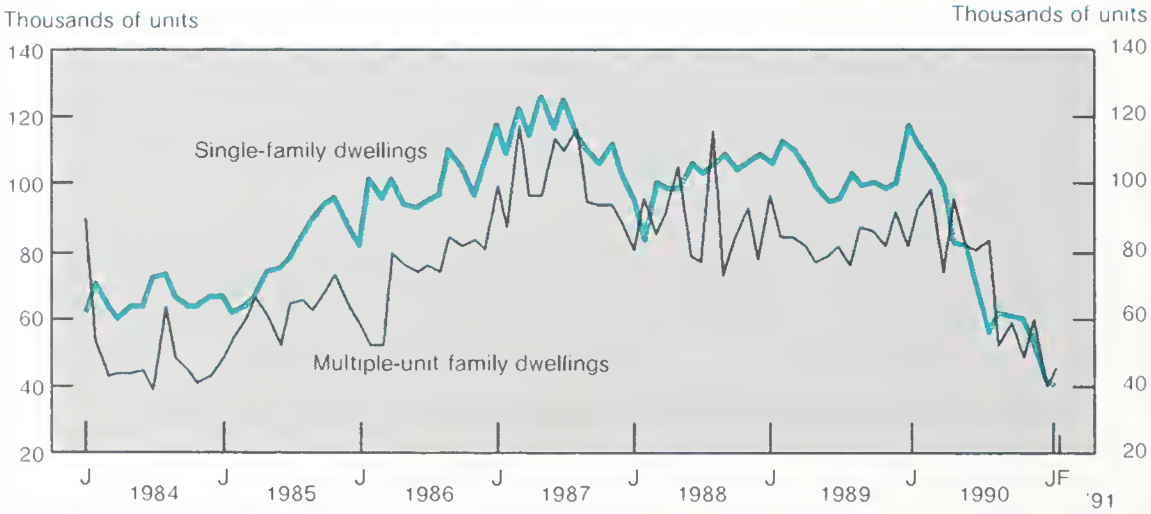
Wartime housing project in Chicoutimi, Quebec, circa 1943.

matching the record set in 1988. This occurred despite slower economic growth, higher mortgage rates and decreased consumer confidence.

Total housing starts (215,382) were down only 3% from the 1988 total, and 12% from a peak in 1987. In the first quarter, starts averaged a seasonally adjusted annual rate (SAAR) of 219,000 units. In the second quarter, the SAAR slowed to 209,000 units as a result of economic uncertainty and higher interest rates. Interest rates began to edge down by the end of the second quarter, causing a modest recovery to a SAAR of 219,000 units in the third quarter and of 218,000 units in the fourth quarter.

Chart 7.1

HOUSING STARTS IN URBAN CENTRES



Single-detached units accounted for 58.5% of all starts, a slightly higher proportion than in 1988. However, the 125,968 new single units were 1.9% fewer than in 1988. Construction of multiple-family dwellings reached 89,414 units, compared to 94,097 in 1988.

The strong showing in 1989 was due to gains in British Columbia and Alberta and continuing momentum in Ontario and Quebec, although housing starts in the latter two provinces actually declined. Newfoundland and New Brunswick recorded more starts, but all other provinces declined. In British Columbia, strong employment growth, high levels of migration and low vacancy rates contributed to the sharp increase. In Alberta, the important factors were low inventories and vacancy rates coupled with increases in migration to the province and in consumer confidence.

Vacancy rates declined in the major metropolitan areas in British Columbia and Alberta in 1989. By contrast, rates in Manitoba and Saskatchewan continued to rise as many residents moved out of the province. In Ontario, vacancy rates were unchanged. In Quebec, Montreal's rates had jumped to about 5% by October, but rates fell in most other metropolitan areas of the province. In the Atlantic provinces, vacancy rates either fell or stayed the same in most metropolitan areas.

7.3 CONSTRUCTION, LAND AND HOUSING COSTS

Since 1986, the average cost of buying a new home in Canada has increased 42.6%. House prices increased an average of 13.2% in 1989, outpacing the Consumer Price Index (CPI), which increased 5.0%.

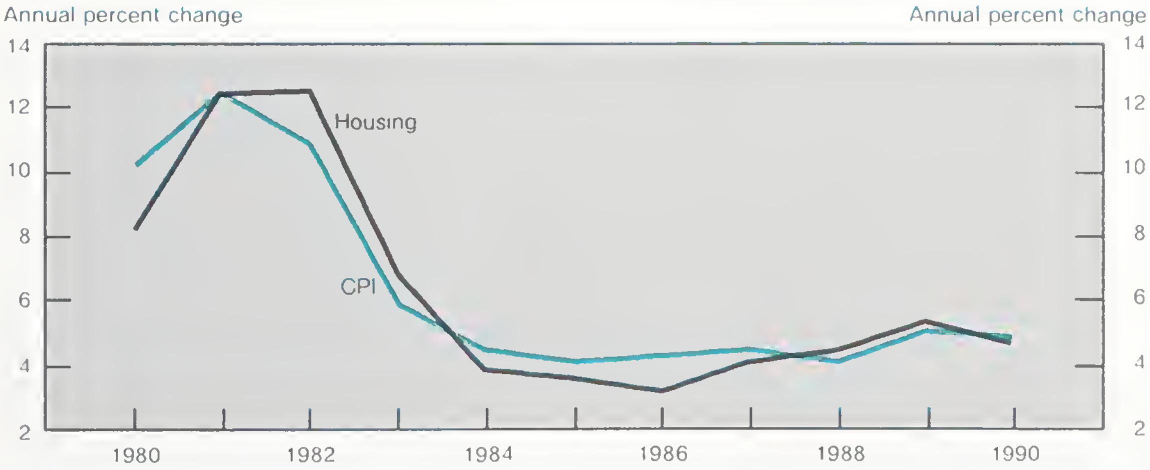
Central Canada and British Columbia had the largest new house price increases during 1989. In Toronto, the increase was 22.4%; in Vancouver, it was 15.7%. Urban centres in the Maritimes had small to modest increases, as did cities in the Prairies, except for Calgary and Edmonton. In Winnipeg, the only major urban centre where prices of new homes dropped, the decline was less than 0.5%.

Land prices rose more than the costs of residential building materials and labour. Land costs increased 26.3%, while wages rose only slightly more than inflation.

Owner-occupied shelter costs increased more than shelter costs for renters. According to the CPI, the increase was 5.1% for renters and 7.6% for owners. Mortgage interest for owners jumped 9.7% from 1988, while replacement cost increased 7.9% and insurance premiums jumped 8.1%. Owner repair costs and property taxes also increased, but by a more modest 3.3% and 5.9%, respectively.

Chart 7.2

HOUSING PRICES IN THE CONSUMER PRICE INDEX[1]



[1] Includes new and resale housing.

7.4 PROVINCIAL TRENDS

British Columbia's housing market was very active in 1989, with large increases in starts, sales and prices. The province's rental market remained tight and rent increases accelerated. Housing demand increased substantially because of a strong economy, rising migration to the province, and increases in consumer confidence and foreign investment. Indeed, BC's housing starts in 1989 were the second highest of the decade, rising 28% to 38,894 units, just short of the 1981 record of 41,585. This was the fifth consecutive year of increases, the longest expansion phase recorded. For single-detached units, starts rose 22% to 21,612. Multiple housing starts increased 36% to 17,282 units, with most of the increase coming from condominium starts. New house prices rose an estimated 15.7% in Vancouver and 10.2% in Victoria.

BUILDING PERMITS

In 1989, the value of building permits hit a record level of $40 billion, a 14.9% jump from 1988.

Residential construction permits totalled $21.7 billion in value, up 7.9%, while non-residential permits rose 24.5% to $18.3 billion.

In 1917, Canada's 25 largest cities issued permits for about $34 million worth of construction. By 1959, permits issued for all kinds of construction in Canada had a value of about $2.4 billion.

Today, Toronto issues the greatest number of both residential and non-residential building permits.

National Film Board/National Archives of Canada/C-73295

Construction work on Government Temporary Building No. 4, Ottawa, Ontario, to meet the demand for office space for expanding wartime government departments during World War II.

TRENDS IN CANADIAN ARCHITECTURE

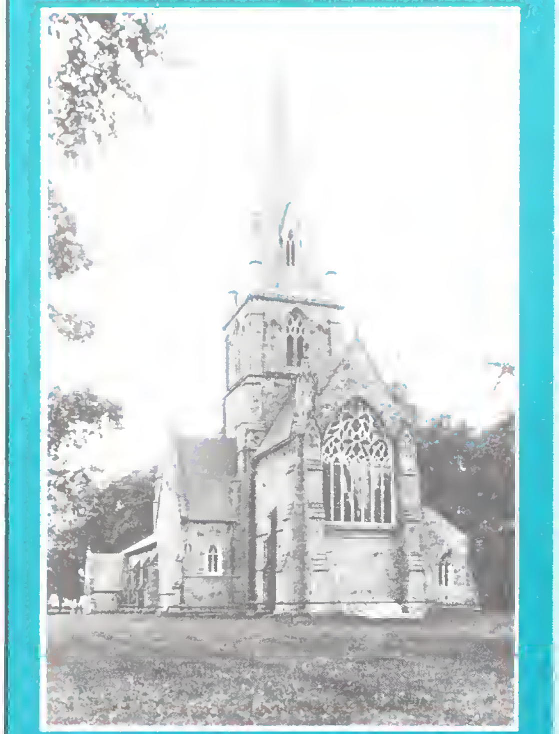
When the French and English colonized what is now Canada, they brought with them the architectural styles of their homelands. In New France, for example, homes at first resembled those of the French provinces of Normandy, Maine, or Anjou. Gradually, however, practical measures changed the look of the common Quebec home — it developed a higher main floor, chimneys at both ends of the building and the familiar bell-cast eaves. The ***maison quebecoise*** *and the familiar stone churches with silver spires remain the most characteristic architectural structures from Quebec's colonial past.*

In the last half of the 18th century, British immigrants and United Empire Loyalists coming north from the United States brought with them Georgian principles of symmetry. While these buildings sometimes lack the detail of the European examples that inspired them, they have given towns such as Kingston, Prescott, Brockville and Halifax an ordered Georgian character which endures to this day.

In the early 19th century, Gothic revivalism took hold in British North America and remained popular for the better part of the century. Each of the major Christian denominations constructed their own unique variants of this style, with its fanciful emphasis on pointed arches, ribbed vaults and flying buttresses. One of the finest examples is Christ Church Cathedral (1846-53) in Fredericton. Among public buildings, the Parliament Buildings are Canada's best-known example of the Gothic revival style.

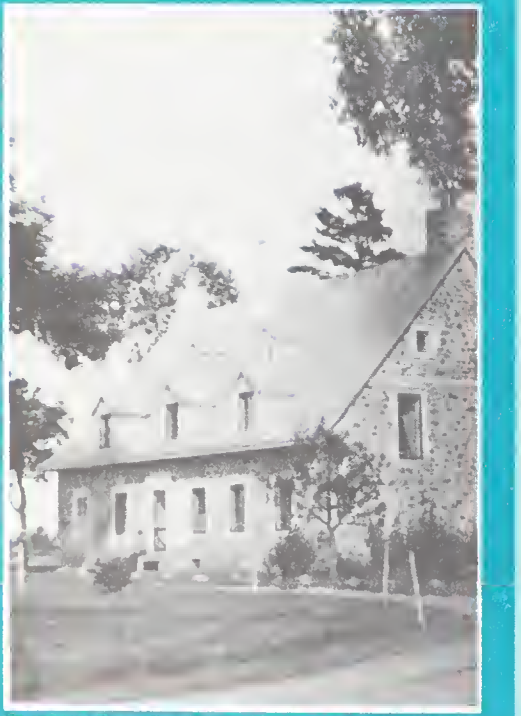
Midway through the 19th century, Gothic revival was joined by other styles, notably the Romanesque, Queen Anne and Picturesque. This popular mixing of architectural styles is displayed admirably in Canada's many steep-roofed hotels, such as Quebec's Chateau Frontenac and the Banff Springs Hotel in the Rocky Mountains. These buildings liberally mix allusions to Scottish castles and French chateaux to create a distinctly Canadian hybrid.

At the turn of the 20th century, pride in the British Empire prompted British and Canadian architects alike to rediscover the architectural feats of another great empire — the Roman. The symmetrical legislature buildings of all three Prairie provinces are



Department of the Interior/National Archives of Canada/PA-41799

The Christ Church Cathedral, Fredericton, New Brunswick: an example of the Gothic revivalism popular in the early 19th century.



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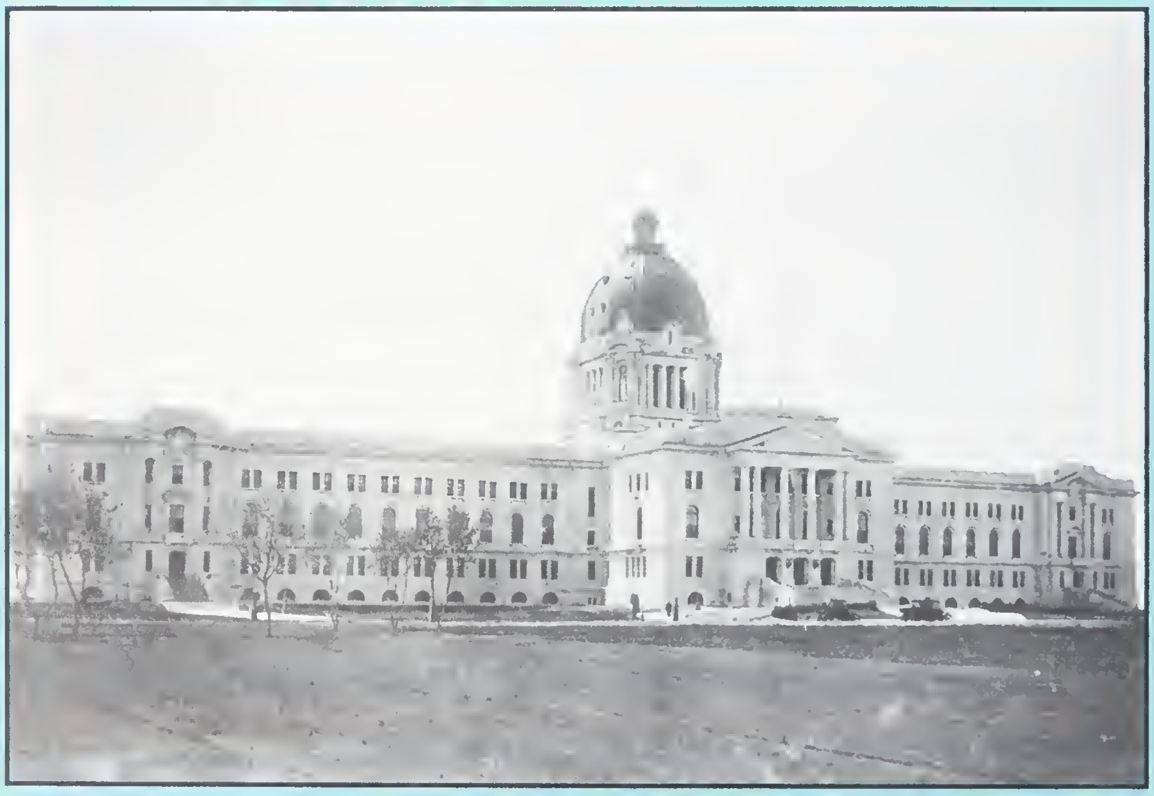
Quebec manor home, 1928.



W.J. Topley/National archives of Canada/PA-11772

Parliament Buildings, Regina, Saskatchewan, an example of *beaux-arts* architecture.

Duncan Cameron/National Archives of Canada/PA-168020

Centre Block, Parliament Buildings, Ottawa.

based on this revived Roman, or ***beaux-arts****, style. The train stations of Toronto and Vancouver also provide excellent examples of how architects adapted the architectural components of the Roman public bath to a busy public transit point so many kilometres from Rome.*

> *Historically, Canadian architects have adapted ideas from Europe and the US. But over the past three decades, many Canadian architects have developed their own unique architectural visions — architects such as Arthur Erikson (Simon Fraser University; Canadian Embassy, Washington), Moshe Safdie (Habitat 67, Montreal; the National Gallery of Canada, Ottawa); and Douglas Cardinal (St. Mary's Cathedral, Red Deer; Canadian Museum of Civilization, Hull).*

Some Canadian architects, particularly Ernest Cormier, introduced a French style called "Art deco" between the war years. Cormier designed the Université de Montréal (1924-42), and the Supreme Court in Ottawa (1938-39).

After World War II, Canadian architects were won over to the modernist cause, which was already transforming the cities of America. Twentieth-century materials such as steel and reinforced concrete had made the skyscraper possible. Now Europeans like Mies van der Rohe, Walter Gropius and Le Corbusier were providing the inspiration for a new "international" style of architecture which rejected any reference to the past in preference for severe, impersonal geometric shapes.

Every large Canadian city has scores of buildings in the "international" style, notable among them the Toronto City Hall, the Toronto Dominion Centre and the B.C. Electric Building (now BC Hydro) in Vancouver.

In recent years Canadian architecture has begun to reintegrate some of the older traditions of architecture with modern ones. The results can been seen in such structures as the Mississauga City Hall by J. Michael Kirkland and Edward Jones, and Vancouver's Sylvia Hotel extension by Richard Henriquez.

City of Mississauga

Mississauga's Civic Centre: mixing traditional and contemporary architectural styles.

Canadian Museum of Civilization

Canadian Museum of Civilization, Hull, Quebec.

HEARTH SIZE CHANGING

The average size of houses in Canada is increasing, but fewer people are living in these houses.

In 1961, the average Canadian house had 5.3 rooms, and 22% of all houses had seven or more rooms. Twenty-five years later, the average house had 5.8 rooms, and 35% of all houses had seven or more rooms. And from 1981 to 1986, the number of Canadian dwellings with 10 or more rooms jumped by 36%.

However, Canadians are not building these larger homes to accommodate larger households. From 1961 to 1986, the average size of Canadian households actually dropped from 3.9 persons to 2.8 persons.

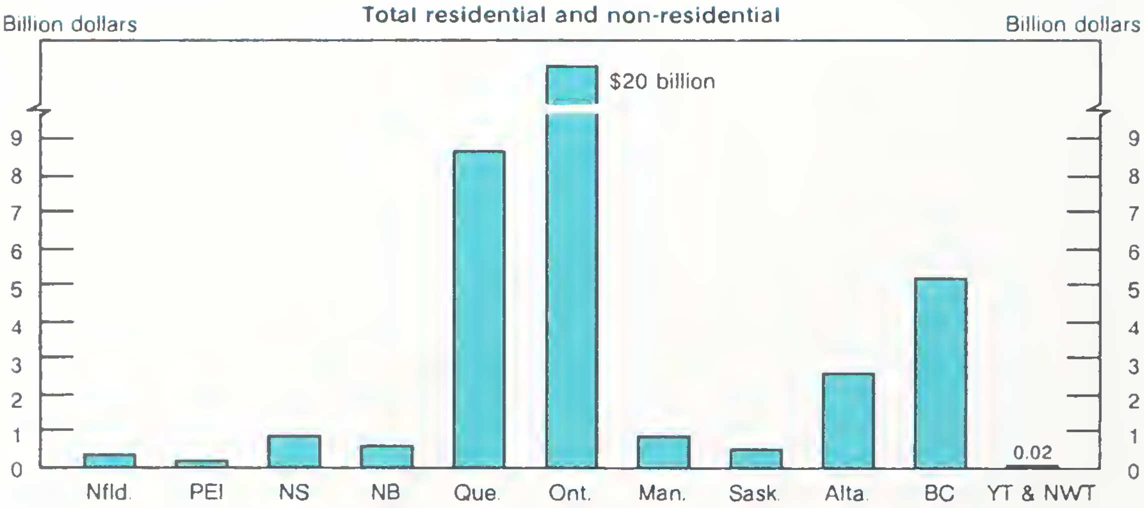
Western Development Museum/National Archives of Canada/PA-38703

Sod house on the Prairies, circa 1910.

Housing starts in Alberta rose 29.5%, to 14,712, with single family homes accounting for 83.9% of the total. Housing demand rose due to an expanding and more diversified economy, healthy employment growth, more investment and large numbers of migrants to the province. Single-detached starts increased 27% to 12,345; multiple-family starts increased 40% to 2,367 units. The strength of Alberta's housing market was reflected in declining rental vacancy rates. In the October 1989 Canada Mortgage and Housing Corporation (CMHC) rental market survey, the Edmonton vacancy rate in privately initiated structures of six units or more was 2.1%, down from 4.4% the previous year. The Calgary rate was 1.1%, down from 2.3%.

Chart 7.3

VALUE OF BUILDING PERMITS ISSUED, 1989



In 1989, the Saskatchewan housing industry had its worst year since 1970. With 1,906 housing starts, the province experienced a 50% decline from the previous year and the second lowest total since the CMHC began recording housing starts in 1946. Single-detached starts fell 38% to 1,383; multiple-unit starts fell 68% to 523. Oversupplied markets and weak demand were the main causes of this sharp drop, which led to substantial restructuring in the industry. Other factors included declines in employment, large numbers of residents moving out of the province, and low consumer confidence.

Weak demand characterized the Manitoba housing market in 1989. Key causes were a slow recovery from the 1988 drought, high mortgage rates, reduced consumer confidence and continued high migration out of the province. Housing starts fell from 8,174 units in 1987 to 5,455 in 1988, dropping to 4,084 in 1989. In 1989, single-detached starts fell 18% to 2,966. Because of oversupplied rental markets, multiple starts were even harder hit, falling 40% to 1,118 units.

In 1989, the Ontario housing market was buoyant for the fourth year in a row, sustained by economic growth and large numbers of international migrants, particularly to the Toronto Census Metropolitan Area (CMA). Shortages of labour and materials abated, but land in some centres remained in short supply. Although housing starts fell 6.6% to 93,337 from 1988, this was slightly more than the CMHC had forecast. Starts of multiple units dropped 7%; single-detached starts declined 6%. Throughout Ontario, the decline in multiple units was largely confined to rental apartments. Starts of single-detached units increased in Sudbury, southwestern Ontario, and smaller urban centres across the province as builders provided affordable housing outside major cities. Condominiums showed more strength than expected, partly because of units built within the construction period but sold before it began, and partly because more modestly priced units became available. More than 70% of all condominium starts were in the Toronto CMA.

In 1989, Quebec starts fell 15.6% but still exceeded the average for the decade of 45,000 units. This was remarkable considering that unoccupied units climbed to close to 10,000, the highest level ever. At the same time, only 33,000 new jobs were created in the province, well below the 84,000 created in 1988. However, this was countered by a record net gain of 25,000 new residents to the province. Single-detached starts declined 11.7% to 24,493; multiple-unit starts dropped 19% to 2,456, largely because of high vacancies and low rent increases.

In New Brunswick, economic growth slowed in 1989. However, total housing starts increased very slightly to 3,681. Single-detached starts dropped by 1.5% to 2,909, while multiple-family starts increased by 15.5% to 772.

In Nova Scotia, slower economic and employment growth during 1989 resulted in a 2% decline in starts to 5,359. Single-detached starts fell 13%, but multiple-unit starts rose 24%. Most multiple-unit starts were rental apartments in Metro Halifax.

Housing starts in Prince Edward Island fell 29% to 815. Single-detached starts accounted for most of the decline, falling 35% to 456, while multiple-unit starts declined by 20% to 359. The provincial economy was weakened by rising unemployment, declining consumer and business confidence, and migration out of the province.

Strong growth in employment and incomes and a significant improvement in total net migration spurred solid gains in Newfoundland's housing market in 1989. Starts increased 11.6% to 3,536, the highest total since 1980. Single-detached starts were up 3.3% to 2,932, while multiple-unit starts rose 83.6% to 604. The increase in multiple-unit starts was due to federal/provincial assisted housing and to renewed private investment in multiple-unit construction in urban areas.

W J Topley/National Archives of Canada/PA 28064

7.5 CANADA MORTGAGE AND HOUSING CORPORATION

In 1946, Canada's house-building industry had been successively weakened by the Great Depression and then World War II. With thousands of veterans returning home, the industry was confronted with a housing demand it could not meet.

The Canadian government responded by creating the Canada Mortgage and Housing Corporation (CMHC), which has helped thousands of Canadian families finance the purchase of their homes. CMHC mortgage support is administered through the provisions of the National Housing Act (NHA).

In 1989, the CMHC helped finance 148,509 housing units; another 11,983 units were insured as part of federal and provincial housing projects.

RECENT CHANGES IN CANADIAN HOUSING

MORE ROOM PER PERSON

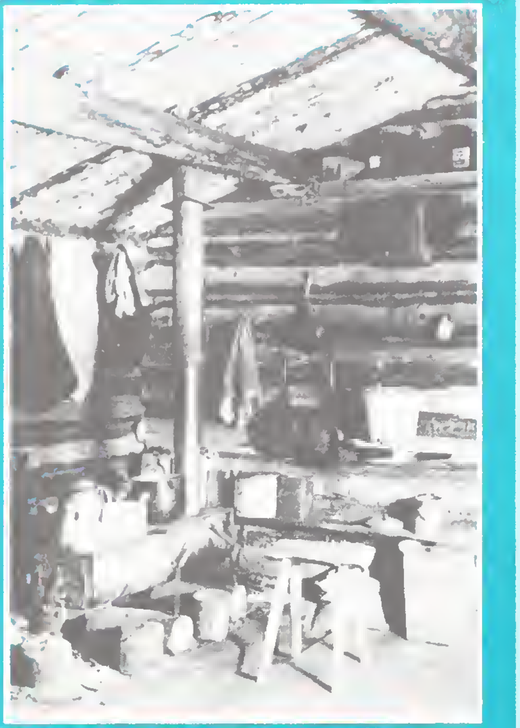
Canadians today have a good deal more room to themselves than they have in the past. While 80% of Canadian homes had at least one room per person in 1951, by 1986, the figure had risen to 98%.

Several factors have come together to allow for this dramatic decrease. The average number of people per household has dropped from 4.0 in 1951 to 2.8 in 1986, while the average number of rooms per dwelling has climbed from 5.3 to 5.8. The number of people living alone went up as well from 7% in 1951 to 22% in 1986.

HOUSING COSTS

When housing costs consume more than 30% of total household income, buying the basics for a household can become a difficult proposition. And for renters, high housing costs can make the prospects of future home-ownership seem slim indeed.

Figures for 1986 indicate that 7 out of 10 young renters (15-19-year-olds) pay out in rent more than 30% of what they earn. Only about one-quarter of middle-aged renters are in this situation; thereafter, however, the proportion increases, with those 65 or older who do not own a dwelling paying out more than 40% of their income in rent.



Mrs. I. Warner/National Archives of Canada/C 26412

Kitchen of a Klondike cabin, circa 1898.

Chris Lund/National Film Board/National Archives of Canada/PA-111484

Modern Canadian living room, 1956.

7.6 MORTGAGE LENDING

In 1989, the overall decline in new lending was 17.3%. New conventional lending declined 24.3%, while new NHA lending increased 8.9%; many first-time buyers took advantage of the NHA mortgage financing program to buy homes that high prices and interest rates otherwise would have put out of their reach.

Chartered banks continued to be the major lenders in 1989, accounting for 46.2% of total NHA and conventional mortgage lending. Trust companies held 29.2% of market share, while life insurance companies had 13.7%.

Growth in the Canadian secondary mortgage market continued to accelerate in 1989, with lending exceeding the combined total for 1987 and 1988. In 1989, 172 mortgage-backed securities (MBS) pools were issued for a total of $1.94 billion; in 1987 and 1988 combined, 146 MBS pools totalling $1.23 billion were issued. Issuers of mortgage-backed securities took advantage of a 2.1% average spread between five-year mortgage rates and yields of five-year Government of Canada bonds.

Among homeowners, however, the percentage paying out 30% or more of their income toward housing costs declines with age. In fact, it is above 20% only for those up to age 24. This trend is not surprising, since most older Canadian homeowners have already paid off their mortgages.

OWNERSHIP

Home-ownership has for many years been a part of the Canadian dream. That dream was a reality for 62% of Canadians in 1986, compared to 60% in 1971.

The Maritime provinces and Saskatchewan remain the provinces with the highest levels of home-ownership (70% or greater). Despite a significant increase (from 47% in 1971 to 55% in 1986), home-ownership in Quebec is still seven points below the national average.

In 1986, almost half (48%) of Canadian homeowners said they had paid off their mortgages, compared to 42% in 1981. Among homeowners who are 25-34 years old, 84% make mortgage payments. This figure declines in each successive age category until, among those over 75 years of age, only 7% are still paying off a mortgage.

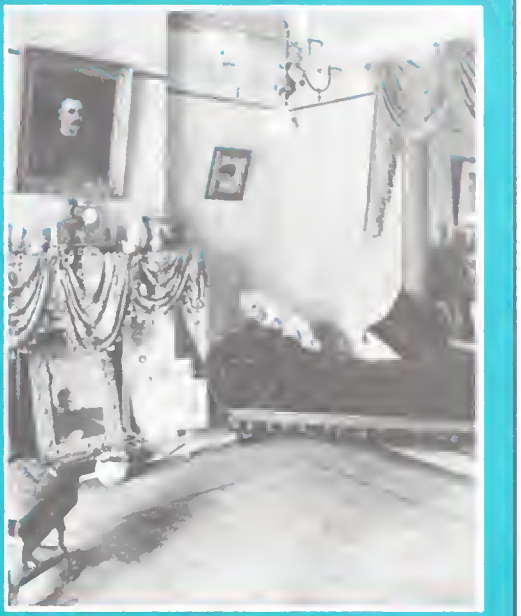
CONDOMINIUMS

Housing prices, especially in Canada's major cities, continue to rise. To be able to afford accommodation in these cities, more and more Canadians are becoming condominium owners. In 1981, 171,000 Canadians lived in condominiums, compared to 234,500 in 1986.

HEATING THE CANADIAN HOME

Canadian society has seen profound changes in the 20th century, many of which have influenced the types of fuels Canadians use to heat their households. In 1941, about 9 out of 10 Canadian homes were heated either by coal/coke or wood. By 1986, this proportion had dropped to only 7%, with almost all of this figure accounted for by the use of wood.

Coal/coke has been replaced by three main heating fuels: natural gas (42%), electrical heating (34%) and oil (18%). These national percentages vary widely depending on the region of the country. For example, with its huge reserves of natural gas, Alberta heats 90% of its homes with natural gas. Almost two-thirds (64%) of Quebec homes use electricity, thanks to a cheap and plentiful supply from Hydro-Québec's massive hydro-electric generating facilities. Remote locations make fuel oil the more logical choice in the Northwest Territories (70% of homes are heated by oil).



W.J. Topley/National Archives of Canada/PA 27886

Drawing room scene shows interior decoration possible at the turn of the century.

CMHC MORTGAGE SUPPORT

CMHC mortgage loan insurance helps make mortgage funds available by protecting lenders from borrowers defaulting. By insuring loans made by NHA-approved lenders, CMHC helps make mortgage financing available across Canada at the lowest possible cost.

Mortgage-backed securities have become a popular way to finance residential mortgages, and an attractive investment for the Canadian public: MBS certificates guarantee timely payments.These securities are encouraging the return of longer-term mortgages, which help stabilize mortgage interest rates and save government subsidy costs, creating a thriving secondary market for mortgages. Of the nearly $2 billion in 1989 issues, $112.4 million of funding went to fixed-rate, long-term mortgages (10 years or more); $537.8 million of lower-cost financing went to social housing loans.

The Federal Co-operative Housing Program is an option for households that cannot afford to own homes. The program uses a financing technique called the index-linked mortgage, through which non-profit co-operative housing associations finance up to 100% of eligible capital costs insured by CMHC.

In most provinces, up to 50% of the units in a project are eligible for federal subsidies that reduce rent to 25% of a household's income. In 1989, some $5.5 million in assistance was committed to 2,039 units, involving $182 million in capital through the use of insured index-linked mortgages to finance co-operative housing projects.

7.7 OTHER CMHC PROGRAMS

KEEPING CANADA'S HOMES WARM

Over the years, Canadians have used a variety of fuels to warm their homes during Canada's famous winters.

In 1928, Canadians used almost 34 million tons of coal; at that time it was the principal home heating fuel. In the mid-1960s, coal was replaced by oil and kerosene. However, the popularity of these fuels also waned when international prices rose sharply in 1973. By the mid-1980s, less than two of every 10 households were heated by oil or kerosene.

Their replacements tended to be piped gas and electricity. For example, in 1961, only 20% of homes used piped gas, and electricity as a heating method was virtually unknown. By 1986, more than 40% of households used gas and 33.5% used electricity.

The federal government's social housing objective is to help households in need obtain affordable shelter in the private market. Under federal-provincial agreements, CMHC works with the territories and most provinces to achieve this goal.

The Non-Profit Housing Program subsidizes rental housing projects on a rent-to-income basis. Subsidies cover the difference between operating costs and revenue. Projects may be owned and operated by private or public non-profit corporations, or by non-profit co-operatives.

The Rent Supplement Program subsidizes private landlords who offer their units to households in need, and also covers up to half of units in federal co-operative housing projects. The subsidy covers the difference between the rent the household can pay and the unit's market rent.

Several programs focus on housing for native Canadians. These include the Urban Native Non-Profit Housing Program, the On-Reserve Non-Profit Housing Program and the Rural and Native Housing Program.

The Emergency Repair Program provides assistance to rural households needing emergency repairs to make their homes safe. In 1989, $2.5 million was given to 1,268 households.

Through Project Haven, operated with Health and Welfare Canada, up to 500 new hostels across the country will offer refuge to victims of domestic violence.

CMHC also does research on the social, economic and technical aspects of housing and of community planning and development. This work increases public understanding of housing issues, and provides insight into how housing conditions can be improved. In this work, CMHC deals with individuals, educational institutions, industrial and professional firms and organizations, as well as with other government agencies.

CMHC also advises the federal government on housing policy, evaluates housing programs and produces statistics on housing and construction in Canada.

Independent research, housing product development and graduate scholarships are funded through the External Research Program, the Housing Technology Incentives Program and the CMHC Scholarships Program. The Corporation distributes information on housing to the public and to interest groups through the Canadian Housing Information Centre, the National Housing Research Committee and public information programs.

J.J. Kelso/National Archives of Canada/PA-118224

Young girl poses with a bag of coal, circa 1910. At the turn of the century, coal was a common heating fuel.

7.8 HOUSING CENSUS DATA

Statistics Canada conducts a national census every five years. Information in this section is from the 1986 Census, the most recent for which information is available. (All data on home-ownership and shelter costs are for non-farm, non-reserve households only.)

Cost of shelter In 1986, those who owned their home but had mortgages spent an average of $719 a month on shelter costs (mortgage payments, utilities, heat and property taxes). Those without a mortgage spent an average of $216. Average monthly shelter costs for those who rent their homes were $431 (monthly cash rent plus utilities and heat if these were not included).

In 1986, monthly shelter costs for both renter households and for owner households with a mortgage were highest in Alberta, British Columbia and Ontario. For households owning their home free of mortgage, shelter costs were highest in the Northwest Territories, Ontario and Quebec.

Home-ownership In 1986, six of every 10 Canadian households owned their home; of these, 48% had no mortgage. This had increased from 42% in 1981.

Almost three-quarters of households with more than one income earner owned their homes in 1986, in contrast to slightly less than half of households with only one income earner.

Among households owning their homes, the proportions with mortgages were highest in Alberta (60%), the Yukon (56%) and Quebec (56%). Homeowners were least likely to have a mortgage in Newfoundland, where only one in three did in 1986.

In 1986, 17% of all household maintainers (the maintainer is the person who pays the expenses of the dwelling) under the age of 25 were homeowners. For the 25 to 34 age group, the proportion increased to about 49%. The 45 to 54 age group had the highest rate, at 76%. Rates for the elderly were lower: 69% for the 65 to 74 age group, and 57% for the 75 and over group. These figures reflect the fact that some seniors rent apartments or move to institutions rather than maintain a household.

These ownership rates show that Canadians tend to rent their dwellings at first, then become homeowners, maintaining this status until late in life.

7.9 CONSTRUCTION

Data for construction cover the estimated value of new construction and repairs performed by contractors, by government departments, by other persons or firms not primarily engaged in the construction industry, by homeowners, and by the construction units of utility, manufacturing, mining and logging companies.

The data in this section come from a Statistics Canada capital and repair expenditures survey. (For information on machinery and equipment expenditures, see Chapter 20.)

In 1990, construction expenditures in Canada were an estimated $89.3 billion. This was a 4% increase from the 1989 total ($85.5 billion), which was 10.5% higher than the 1988 figure ($77.4 billion).

Of these totals, residential construction accounted for $40.1 billion in 1990, $38.7 billion in 1989, and $34.9 billion in 1988. Non-residential construction accounted for an estimated $49.2 billion in 1990, $46.8 billion in 1989, and $42.5 billion in 1988.

In 1989, the total value of permits issued for building construction was about $40.0 billion, up from $34.8 billion in 1988. Residential construction permit value was $21.7 billion in 1989, compared to $20.1 billion in 1988. (See Tables 7.1, 7.2, 7.3.)

Sources

Canada Mortgage and Housing Corporation.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Housing Starts and Completions,* monthly. 64-002
- *Construction in Canada,* annual. 64-201
- *Building Permits, Annual Summary,* annual. 64-203
- *Highway, Road, Street and Bridge Contractors,* annual. 64-206
- *Non-residential General Contractors and Developers,* annual. 64-207
- *Residential General Contractors and Developers,* annual. 64-208
- *Canada's Young Family Home-owners,* 1981 Census, 1984. 99-939
- *Mortgagor Households in Canada: Their Geographic and Household Characteristics, Affordability and Housing Problems, 1981 Census,* 1986. 99-945

TABLES

LEGEND

..	*not available*	e	*estimate*
...	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

7.1 VALUE OF BUILDING PERMITS ISSUED, 1988 AND 1989 (MILLION DOLLARS)

Year and province or territory	Residential construction			Non-residential construction			Total
	New	Improvements	Total	Industrial	Commercial	Institutional and governmental	
1988							
Newfoundland	140.5	21.6	162.1	11.7	69.0	30.1	272.9
Prince Edward Island	76.4	9.8	86.2	29.5	45.2	12.2	173.1
Nova Scotia	404.1	74.8	478.9	58.9	207.2	88.5	833.5
New Brunswick	215.9	40.4	256.3	66.7	121.6	57.5	502.1
Quebec	3,799.6	553.6	4,353.2	851.2	2,088.2	455.6	7,748.2
Ontario	9,695.8	868.7	10,564.5	993.5	4,316.9	1,405.8	17,280.7
Manitoba	418.2	56.9	475.1	41.5	176.7	95.9	789.2
Saskatchewan	207.3	35.2	242.5	22.6	139.4	119.9	524.4
Alberta	855.4	77.9	933.3	744.2	517.5	245.1	2,440.1
British Columbia	2,327.7	174.5	2,502.2	216.1	1,053.4	377.9	4,149.6
Yukon	15.6	3.3	18.9	4.6	10.9	10.8	45.2
Northwest Territories	39.8	5.7	45.5	5.8	9.7	9.0	70.0
Total	18,196.3	1,922.4	20,118.7	3,046.3	8,755.7	2,908.3	34,829.0
1989							
Newfoundland	172.0	26.9	198.9	29.9	89.6	28.4	346.8
Prince Edward Island	62.0	11.9	73.9	10.2	53.8	11.1	149.0
Nova Scotia	406.9	93.4	500.3	65.5	238.3	77.0	881.1
New Brunswick	226.2	48.7	274.9	62.8	183.0	75.7	596.4
Quebec	3,468.2	605.7	4,073.9	2,155.5	2,025.6	440.6	8,695.6
Ontario	10,217.0	978.0	11,195.0	2,562.6	4,942.2	1,331.4	20,031.2
Manitoba	343.2	58.9	402.1	118.0	255.3	70.6	846.0
Saskatchewan	116.8	30.8	147.6	83.5	133.7	146.6	511.4
Alberta	1,276.0	93.0	1,369.0	257.3	668.1	352.9	2,647.3
British Columbia	3,215.5	193.6	3,409.1	228.4	1,160.2	423.3	5,221.0
Yukon	24.6	5.1	29.7	0.9	11.9	8.1	50.6
Northwest Territories	29.3	2.1	31.4	2.5	32.3	2.5	68.7
Total	19,557.7	2,148.1	21,705.8	5,577.1	9,794.0	2,968.2	40,045.1

7.2 VALUE OF BUILDING PERMITS ISSUED IN THE MOST ACTIVE MUNICIPALITIES, 1986-89 (MILLION DOLLARS)

Province and municipality	1986	1987	1988	1989
Newfoundland				
St. John's	88.1	88.5	90.4	121.5
Prince Edward Island				
Charlottetown	17.7	16.8	15.4	38.5
Nova Scotia				
Dartmouth	80.1	96.0	84.2	112.4
Halifax	129.2	178.9	134.8	136.3
New Brunswick				
Fredericton	72.8	43.0	38.6	84.6
Moncton	51.4	78.6	79.9	53.8
Saint John	47.8	62.0	84.8	60.9
Quebec				
Gatineau	100.9	118.6	127.9	147.4
Hull	86.1	62.3	70.2	54.4
Jonquière	50.9	42.3	49.7	64.3
Laval	441.3	622.5	502.2	437.6
Longueuil	137.7	188.0	200.2	178.4
Montreal	1,022.1	811.7	990.7	1,061.6
Quebec	225.0	228.8	320.9	418.1
St. Laurent	102.0	54.4	159.2	206.9
Ste-Foy	118.0	157.1	112.2	101.5
Sherbrooke	95.9	94.0	106.2	88.8
Ontario				
Ajax	146.5	196.6	114.7	166.7
Brampton	414.7	547.6	576.9	503.4
Burlington	152.5	227.0	249.7	237.7
Cumberland	63.7	98.9	136.7	124.7
Etobicoke	180.1	242.8	356.0	364.6
Gloucester	116.8	168.6	147.6	140.2
Hamilton	381.2	280.3	273.4	358.7
Kitchener	163.4	283.7	198.4	294.4
London	327.1	427.9	528.3	479.6
Markham	295.6	549.2	416.5	512.6
Ontario (concluded)				
Mississauga	1,095.9	1,361.1	1,730.4	1,654.9
Nepean	176.2	180.6	208.9	167.7
Newmarket	70.6	104.7	150.6	292.7
North York	606.9	638.9	814.2	892.9
Oakville	259.7	400.6	375.8	439.5
Oshawa	156.9	120.2	186.1	123.0
Ottawa	330.3	493.2	538.1	545.0
Pickering	184.2	225.2	323.2	177.5
Richmond Hill	313.4	569.8	664.7	453.8
St. Catharines	87.1	119.7	124.3	173.0
Scarborough	490.1	664.9	733.8	819.7
Toronto	867.2	988.4	1,090.4	2,238.8
Vaughan	633.0	654.2	603.1	686.5
Waterloo	158.0	142.6	158.5	168.6
Whitby	115.0	102.3	197.7	224.6
Windsor	106.3	141.6	163.5	153.6
Manitoba				
Winnipeg	600.8	644.7	548.2	643.5
Saskatchewan				
Regina	198.7	194.8	139.4	120.1
Saskatoon	259.8	230.6	207.5	217.8
Alberta				
Calgary	569.6	647.6	629.4	919.7
Edmonton	530.8	386.9	422.1	510.4
Lethbridge	42.6	59.8	59.6	44.5
Medicine Hat	26.6	29.5	43.0	32.2
British Columbia				
Burnaby	162.8	193.7	267.2	316.7
North Vancouver	43.7	41.1	47.2	66.8
Richmond	134.9	143.4	303.6	350.6
Saanich	78.9	91.9	98.7	122.0
Surrey	310.3	347.3	507.3	671.8
Vancouver	460.2	613.9	741.6	956.5

7.3 ESTIMATED VALUE OF BUILDING PERMITS ISSUED IN METROPOLITAN AREAS, 1986-89 (MILLION DOLLARS)

Metropolitan area	1986	1987	1988	1989
Calgary	569.6	647.6	660.4	991.7
Chicoutimi - Jonquière	107.4	279.2	135.7	155.0
Edmonton	640.8	497.2	625.7	989.6
Halifax	384.8	452.3	371.4	391.2
Hamilton	695.3	710.0	786.6	870.8
Kitchener	451.0	670.1	556.7	727.9
London	362.6	477.6	665.4	612.0
Montreal	3,285.7	4,141.7	4,162.2	4,095.5
Oshawa	271.9	222.5	546.3	534.5
Ottawa - Hull	1,069.2	1,379.2	1,591.2	1,583.4
Quebec	662.6	850.7	857.0	1,045.3
Regina	198.9	198.9	149.4	147.5
St. Catharines - Niagara	250.8	304.9	414.4	568.0
Saint John	83.8	99.0	122.0	88.3
St. John's	150.5	157.5	175.1	217.4
Saskatoon	259.8	230.6	219.8	228.8
Sudbury	66.6	114.8	131.4	199.6
Thunder Bay	79.2	98.3	111.6	155.5
Toronto	5,898.7	7,523.1	8,784.1	10,019.3
Trois-Rivières	128.8	155.7	171.3	550.2
Vancouver	1,602.8	1,901.7	2,732.7	3,436.7
Victoria	229.7	290.4	410.5	411.8
Windsor	184.5	235.9	292.4	306.4
Winnipeg	611.3	657.4	570.6	659.8

7.4 VALUE OF CONSTRUCTION WORK PURCHASED, BY NEW AND REPAIR, CURRENT AND CONSTANT DOLLARS, 1981-90[1] (MILLION DOLLARS)

Year	New		Repair		Total		Total construction as percentage of Gross Domestic Expenditure	
	Current dollars	Constant 1981 dollars	Current dollars	Constant 1981 dollars	Current dollars	Constant 1981 dollars	Current dollars %	Constant 1981 dollars %
1981	47,859	47,859	9,025	9,025	56,884	56,884	16.0	16.0
1982	46,516	43,759	9,548	9,119	56,064	52,878	15.0	15.3
1983	45,678	42,412	10,270	8,930	55,948	51,342	13.8	14.4
1984	45,770	41,012	10,804	9,087	56,574	50,099	12.7	13.3
1985	58,090	50,689	9,893	8,063	67,983	58,752	14.2	14.8
1986	61,117	51,706	10,584	8,347	71,701	60,053	14.2	14.7
1987	69,920	55,981	12,051	9,277	81,971	65,258	14.9	15.3
1988	77,352	59,365	13,518	10,156	90,870	69,521	15.1	15.5
1989	85,527	62,337	14,536	10,564	100,063	72,901	15.4	15.8
1990	90,554	—	15,432	—	105,986	—	—	—

[1] *Actual data, 1981-88; preliminary data, 1989; intentions, 1990.*

7.5 CAPITAL EXPENDITURES ON CONSTRUCTION AND ON MACHINERY AND EQUIPMENT, IN CURRENT AND CONSTANT (1981 DOLLARS), 1976-90[1] (MILLION DOLLARS)

Year	Private and public investment						Percentage of GDE[2]	
	Capital expenditures						Current dollars	Constant 1981 dollars
	Construction		Machinery and equipment		Total			
	Current dollars	Constant 1981 dollars	Current dollars	Constant 1981 dollars	Current dollars	Constant 1981 dollars		
1976	28,144	42,006	15,492	17,485	43,636	59,491	22.0	19.8
1977	30,130	42,859	16,467	17,518	46,597	60,377	21.4	19.4
1978	31,912	42,549	18,448	18,863	50,360	61,412	20.8	18.9
1979	35,847	44,092	22,508	21,684	58,355	65,776	21.1	19.4
1980	40,157	44,718	26,036	26,379	66,193	71,097	21.4	20.7
1981	47,860	47,860	31,744	31,744	79,604	79,604	22.4	22.4
1982	46,518	43,761	30,244	28,318	76,762	72,079	20.5	20.9
1983	45,676	42,410	27,843	26,267	73,519	68,677	18.1	19.3
1984	45,770	41,013	29,608	28,171	75,378	69,184	16.9	18.3
1985	58,090	50,689	32,414	31,048	90,504	81,737	18.9	20.6
1986	61,117	51,706	35,969	35,092	97,086	86,798	19.2	21.3
1987	69,921	55,982	39,241	40,622	109,162	96,604	19.8	22.7
1988	77,352	59,365	45,583	49,655	122,935	109,020	20.4	24.3
1989	85,527	62,337	48,820	55,039	134,347	117,376	20.7	25.5
1990	90,554	—	53,731	—	144,285	—	22.2	—
1990	89,317	—	53,613	—	142,931	—	22.0	—

[1] *Actual expenditures 1976-88; preliminary actual 1989; intentions 1990; revised intentions, 1990.*

[2] *The percentage is calculated by dividing "Gross Fixed Capital Formation", as defined by the National Income and Expenditure Accounts, by the total "Gross Domestic Expenditure*

7.6 SUMMARY OF CAPITAL AND REPAIR EXPENDITURES BY ECONOMIC SECTOR, 1990[1] (MILLION DOLLARS)

Sector	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Total
Agriculture and fishing	1,151.6	2,101.2	3,252.8	519.6	1,507.0	2,026.6	1,671.2	3,608.2	5,279.4
Forestry	152.8	170.0	322.8	96.9	250.7	347.6	249.7	420.7	670.4
Mining, quarrying and oil wells	6,473.0	1,278.3	7,751.3	466.3	2,592.8	3,059.1	6,939.3	3,871.1	10,810.4
Construction industry	426.5	1,811.6	2,238.1	74.1	1,234.1	1,308.2	500.6	3,045.7	3,546.3
Manufacturing	4,054.4	18,475.3	22,529.7	1,101.4	7,299.7	8,401.1	5,155.8	25,775.0	30,930.8
Utilities	11,595.5	12,273.7	23,869.2	2,419.6	6,025.1	8,444.7	14,015.1	18,298.8	32,313.9
Trade	1,287.0	2,458.8	3,745.8	396.7	500.6	897.3	1,683.7	2,959.4	4,643.1
Finance, insurance and real estate	9,076.6	1,938.8	11,015.4	987.4	459.1	1,446.5	10,064.0	2,397.9	12,461.9
Commercial services	1,659.9	9,221.2	10,881.1	407.7	836.4	1,244.1	2,067.6	10,057.6	12,125.2
Institutions	3,498.2	1,227.6	4,725.8	1,158.0	365.3	1,523.3	4,656.2	1,592.9	6,249.1
Government departments	11,121.3	2,774.4	13,895.7	2,898.6	650.5	3,549.1	14,019.9	3,424.9	17,444.8
Housing[2,3]	40,057.5	—	40,057.5	4,905.5	—	4,905.5	44,963.0	—	44,963.0
Total	90,554.3	53,730.9	144,285.2	15,431.8	21,721.3	37,153.1	105,986.1	75,452.2	181,438.3

[1] *Intentions, 1990.*

[2] *Housing expenditures are derived from the data available at the time of publication. Revised and adjusted data are available in CANSIM.*

[3] *Residential capital expenditures are arrived at by estimating the value of work put in place on private and public housing starts.*

7.7 CAPITAL AND REPAIR EXPENDITURES, 1990[1,2] (MILLION DOLLARS)

Province or territory	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Total
Newfoundland	1,534.4	633.5	2,167.9	267.3	414.5	681.8	1,801.7	1,048.0	2,849.7
Prince Edward Island	302.3	119.0	421.3	65.2	54.2	119.4	367.5	173.2	540.7
Nova Scotia	2,168.1	1,424.8	3,592.9	559.7	582.1	1,141.8	2,727.8	2,006.9	4,734.7
New Brunswick	1,837.8	991.8	2,829.6	322.2	603.6	925.8	2,160.0	1,595.4	3,755.4
Quebec	19,350.4	12,874.3	32,224.7	3,511.2	4,418.9	7,930.1	22,861.6	17,293.2	40,154.8
Ontario	35,015.7	22,520.2	57,535.9	5,158.1	7,862.3	13,020.4	40,173.8	30,382.5	70,556.3
Manitoba	3,078.5	1,421.5	4,500.0	663.5	864.3	1,527.8	3,742.0	2,285.8	6,027.8
Saskatchewan	3,400.4	1,872.6	5,273.0	754.8	964.1	1,718.9	4,155.2	2,836.7	6,991.9
Alberta	11,499.5	5,362.1	16,861.6	1,833.3	2,760.2	4,593.5	13,332.8	8,122.3	21,455.1
British Columbia	11,681.3	6,225.0	17,906.3	2,180.4	3,048.6	5,229.0	13,861.7	9,273.6	23,135.3
Yukon and Northwest Territories	685.9	286.1	972.0	116.1	148.5	264.6	802.0	434.6	1,236.6
Total	90,554.3	53,730.9	144,285.2	15,431.8	21,721.3	37,153.1	105,986.1	75,452.2	181,438.3

[1] *Intentions, 1990.*

[2] *Capital expenditures on machinery and equipment include an estimate for "capital items charged to operating expenses" in the manufacturing, utilities and trade totals.*

7.8 NEW HOUSING PRICE INDEXES FOR METROPOLITAN AREAS (1986 = 100)

Metropolitan area	1984	1985	1986	1987	1988	1989
St. John's	95.8	97.8	100.0	105.0	107.4	113.2
Halifax		98.1	100.0	103.3	107.2	109.2
Saint John-Moncton	89.0	96.6	100.0	104.8	107.8	111.6
Quebec	88.9	93.7	100.0	108.9	118.4	126.6
Montreal	90.0	93.1	100.0	115.0	126.0	130.2
Ottawa-Hull	97.6	97.3	100.0	105.7	112.7	119.1
Toronto	83.5	85.8	100.0	126.2	147.2	180.2
Hamilton	86.1	90.8	100.0	116.8	130.3	141.3
St. Catharines-Niagara	79.7	88.9	100.0	112.5	119.9	130.0
London	84.7	87.9	100.0	116.1	125.1	137.3
Kitchener	80.2	87.4	100.0	114.4	124.7	137.5
Windsor	86.4	90.7	100.0	106.7	112.3	122.3
Sudbury-Thunder Bay			100.0		118.0	126.0
Winnipeg	89.4	94.0	100.0	105.9	107.1	106.6
Regina	96.3	96.7	100.0	103.6	105.2	106.9
Saskatoon	93.5	95.6	100.0	104.2	106.1	106.9
Calgary	90.1	92.3	100.0	104.0	113.8	121.1
Edmonton	99.3	93.2	100.0	104.2	109.5	118.6
Vancouver	103.4	99.5	100.0	104.5	109.9	127.1
Victoria	112.4	105.3	100.0	97.7	104.8	115.2
Canada	91.1	92.1	100.0	113.0	124.2	141.1

Source
Statistics Canada.

E.McGuire
Major Osborn
H.Munn
T.Binks
Ensign O'Neil
Mrs Osborn
W.Smith

The Salvation Army Archives

Chapter 8

SOCIAL SECURITY

8.1 INTRODUCTION

IN COMMON WITH OTHER INDUSTRIALIZED COUNTRIES, Canada has gradually assembled an array of social services to help those in need and to guarantee the social security of all citizens.

This "safety net" of income security, health and social services programs is based on concern for the well-being of all Canadians in need—children, parents, native peoples, the elderly, veterans, the disabled, the chronically ill.

Many of these programs trace their origins to charitable relief services, often organized by churches. Since World War I, the lead role in social security has passed increasingly to government agencies and programs, with jurisdiction established by the Canadian Constitution.

The provinces and municipalities provide most health and social services as well as financial assistance. The federal government directly administers certain programs for the elderly, for families and for other groups, and funds many provincially-administered initiatives. The federal government is also responsible for veterans' benefits and programs for native people.

This extension of social security has been paralleled by growth in private charitable organizations. Using the skills of hundreds of thousands of volunteers, these organizations offer social support ranging from food banks to orientation programs for recent immigrants.

W.J. Topley/National Archives of Canada/PA-27434

Scene from the Home for Friendless Women, Ottawa, Ontario, 1895.

8.2 THE COST OF SECURITY

In 1989-90, Canada's social security system delivered an estimated $69.7 billion in direct financial benefits, compared to $51.6 billion in 1985-86. Aid to the elderly (including Old Age Security, Guaranteed Income Supplement and Spouses' Allowance) accounted for about one-quarter of total expenditure. From 1985-86 to 1989-90, the retirement and disability components of the Canada and Quebec Pension Plans increased more than for any other program: payments for disability rose 105% to $1.8 billion, and retirement payments climbed 89% to $8.2 billion. The Child Tax Credit and CPP/QPP survivors' benefits both increased about 60%. The largest decrease occurred in the War Veteran's Allowance program, with expenditures dropping 42% from $453.9 million in 1985-86 to $264.4 million in 1989-90.

8.3 SECURITY FOR ALL

CANADA ASSISTANCE PLAN (CAP)

Through the Canada Assistance Plan, the federal government works with the provinces to help families and individuals in need, regardless of the cause.

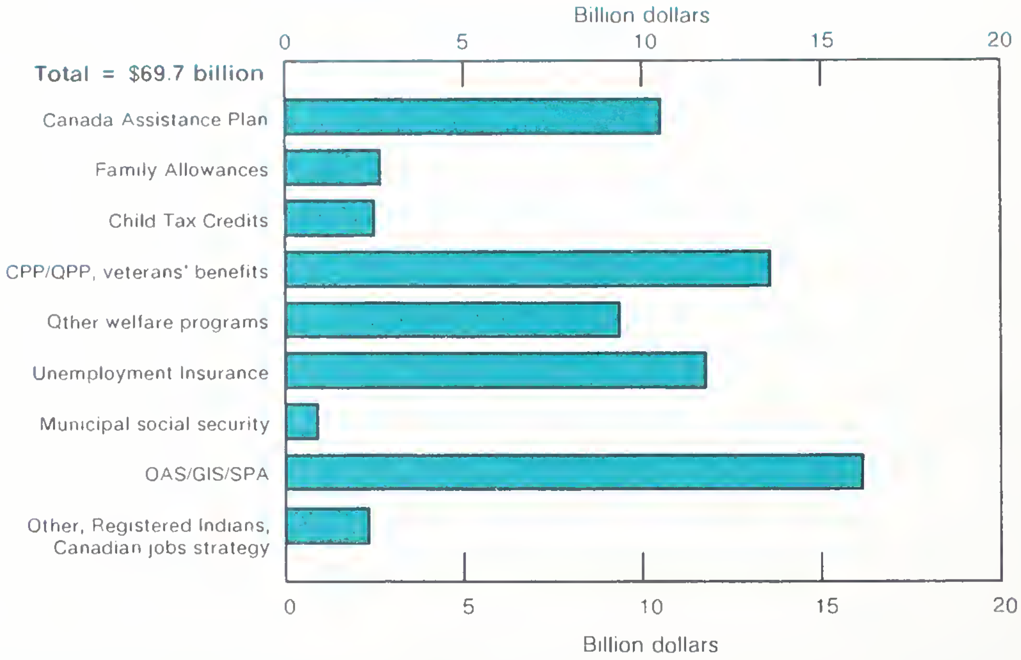
This plan, which reflects a long history of social commitment, is actually a consolidation of four cost-shared programs: the 1952 Old Age Assistance Act, the 1952 Blind Persons Allowance Act, the 1954 Disabled Persons Allowance Act and the 1956 Unemployment Assistance Act. The CAP extended cost-sharing to provincial Mothers' Allowance Programs and to welfare services, including child welfare services.

Eligibility for CAP is based on a needs test that examines a family's basic requirements and the income and assets available to meet these. Assistance covers food, clothing, shelter, fuel, utilities, household supplies, items required to carry on a trade, some welfare services, and specified health and social services. CAP also covers job-search and certain other employment-related programs. (See Table 8.6.)

CAP can also cover some of the costs for special-care facilities, including homes for the aged, nursing homes, child care facilities and hostels for battered women and children.

Chart 8.1

SOCIAL SECURITY EXPENDITURES, BY SELECTED PROGRAMS, 1990



PROVINCIAL SOCIAL SERVICES

Social services vary at the community level as well as by province, depending on needs and available resources. The federal government, through the Canada Assistance Plan, shares in the costs of many of these programs. Some social services programs focus on alleviating basic needs; others involve long-term services. All are guided by a desire to help disadvantaged individuals help themselves, and to prevent, delay or reduce the need for institutional care of the elderly and disabled. Social services also help support families affected by a divorce or a separation, a move to a new community or the need for both parents to work.

Services funded by the Canada Assistance Plan include: crisis intervention, referrals, and social integration services to help individuals isolated from community life; day care and protective and developmental welfare services for children; and home support to enable people to remain in their own homes. Personal, family and financial counselling are also available. A range of community and residential programs focus on reducing family violence and dealing with its consequences. Communities offer activity centres, sheltered workshops, vocational rehabilitation

THE CHILDREN'S AID SOCIETY

Canada's commitment to the social well-being of its citizens is exemplified by many of its social care institutions. Key among them are the Children's Aid Societies. The first Children's Aid Society was founded in Toronto in 1891, by a journalist-turned-social-reformer named John Joseph Kelso, who was known as the "children's friend" by the time he died in 1935.

Kelso's efforts led the way in protecting children across the country. In 1888, Ontario passed the first child protection act in Canada. The act made child abuse a criminal offence, and set the stage for the establishment of Children's Aid societies across Canada by allowing courts to make children wards of institutions and charitable organizations, such as Children's Aid.

John Kelso led the way, helping set up societies first in Toronto and then across Ontario, and working for their acceptance in other provinces. Early Children's Aid services focused on child protection.

In time, every province adopted legislation to protect children who were orphaned, deserted, neglected or abused, whose guardians could not give adequate care, or whose behaviour was unacceptable to authorities.

and day programs for the elderly. The provinces provide nursing and medical services, nutrition counselling, nursing home and intermediate care, residential care, and ambulatory health services.

8.4 SENIOR CITIZENS

SENIOR CITIZENS' BENEFITS

Canada's Old Age Security pension provides monthly benefits to individuals aged 65 and over who meet residency requirements. Since 1967, pensioners with little or no other income have also been eligible for the Guaranteed Income Supplement. In addition, Spouse's Allowances have been available since 1975 to spouses of pensioners when the couple has little or no income other than the pension. In 1979, SPA became available to low-income surviving spouses of pensioners. This provision was expanded in 1985 to include widows and widowers aged 60 to 64 years, subject to an income test.

There are also Reciprocal International Social Security Agreements in place in Canada. These help people qualify for benefits by letting them add periods of residence spent in another country to years of residence in Canada. Conversely, people living in some other countries can use years of residence or contributions in Canada to qualify for benefits. As of July 1990, Canada has reciprocal International Social Security Agreements with Italy, France, Portugal, the United States, Greece, Jamaica, Barbados, Belgium, Denmark, Norway, Sweden, Austria, Saint Lucia, Spain, Finland, Dominica, the Federal Republic of Germany, Australia, Iceland and Luxembourg. Agreements signed with The Netherlands and Cyprus will soon be ratified.

Many Canadian seniors receive income from other income support programs. For example, the Canada Pension Plan provides monthly benefits to retired contributors, while the Unemployment Insurance program offers lump-sum benefits to insured workers on retirement. Most provinces give supplements to low-income seniors, and also offer property- or shelter-related tax credits, grants or rebates. All three levels of government offer supplementary services to elderly Canadians.

CANADA AND QUEBEC PENSION PLANS

In the Canada Pension Plan (CPP) and the Quebec Pension Plan, (QPP), both employers and employees contribute 2.2% of the employee's eligible earnings. Self-employed persons contribute the full 4.4%. In Quebec, the QPP provides similar benefits to contributors and their families, with some variation in benefit levels and eligibility.

The CPP and the QPP are reciprocal: a person who has contributed to both plans applies for benefits where they live. The contributor's place of residence at the time of death determines which plan pays survivors' benefits.

Children's benefits are given to dependent children of disabled pensioners. Orphans' benefits apply to the dependent children of a deceased contributor. Benefits are paid until age 18, but may be extended to age 25 if the child is attending school full-time. If education is interrupted, benefits cease until the child returns to full-time studies. Dependent children are eligible for two CPP benefits if both parents' earnings have been lost through disability or death. In 1990, the monthly CPP children's benefit was $107.96 per child; the QPP was $29.00.

A death benefit is payable to the estate of a deceased contributor who has contributed to the plan for at least three years. In 1990, the maximum death benefit was $2,890 under both the CPP and the QPP.

Division of Pension Credits Provisions for credit splitting (dividing pension credits between spouses in the event of divorce or annulment) were introduced in 1978 and substantially revised in 1987. For divorce and for legal or common-law separation, spouses who have lived together for at least one year now divide equally all CPP pension credits earned while they lived together. (This does not occur if both parties have signed a spousal agreement containing a credit-splitting waiver; however, such waivers are legal only in Saskatchewan). Except for a one-year waiting period, there is no time limit for a legal spouse to apply for credit splitting, but an application will not be accepted if the other spouse has died. Common-law spouses must apply within four years of the separation, but not before a one-year waiting period.

OLD AGE PENSIONS

The first Canadian Old Age Pension Plan was established in 1927. The Plan provided for a monthly payment of $20, but only to citizens aged 70 or older who had been living in Canada more than 20 years and earning less than $125 per year.

In 1951, two new laws were introduced. The *Old Age Security Act* extended the monthly pension to all citizens aged 70 or older and increased it to $40, and the *Old Age Assistance Act* granted financial aid to provinces to allow them to pay at least $40 per month to those aged 65 to 69.

Today three programs are in place to provide minimum income to Canadians aged 65 and older. In 1988 Old Age Security paid a maximum of $315.97 per month; the Guaranteed Income Supplement paid $375.51 to a single person and $244.57 each to married partners, and the Spouse's Allowance paid between $560.54 and $618.85 to those aged 60 to 64 who were married to a pensioner who had little or no other income.

Borden Clark/National Archives of Canada/PA 125353

Parlour chat, 1892.

THE RED CROSS

The first Red Cross flag was flown in Canada during the Northwest Rebellion of 1885. An army surgeon, Major George Sterling Ryerson, borrowed red factory cotton from the artillery and sewed it to a white cloth, to mark and insure the safety of the horse-drawn wagon he used to move the wounded.

Ryerson later founded the Canadian branch of the British Red Cross Society in 1896. Both were based on the International Red Cross Movement, founded in Geneva, Switzerland, in 1859.

The Canadian society's first public meeting in Toronto, in 1898, raised relief funds for both sides in the Spanish American War. When war broke out in South Africa in 1899, Red Cross branches formed across Canada almost overnight, donating food, clothing, and money for the wounded in South Africa.

In 1909, the Canadian government passed the Canadian Red Cross Society Act, establishing The Red Cross as the body responsible for providing volunteer aid in Canada according to the Geneva Convention. In 1927, it was recognized by the International Red Cross Committee as an autonomous national Red Cross Society.

Today, the Canadian Red Cross has 741 branches, 6,000 staff, and 2,500,000 volunteers, including blood donors, across Canada.

ADIAN RED CROSS SOCIETY

John Boyd/National Archives of Canada/PA-71640

The Red Cross in Canada, 1915.

Under the Quebec Pension Plan, spouses who have divorced or received a legal annulment on or after January 1, 1977 may apply for division of pension credits provided they lived with their spouse for at least three years. There are no credit-splitting provisions for separations.

Assignment of Pensions On retirement, either spouse in a marriage or common-law union may apply to share pension benefits earned during the union. Both spouses must be aged at least 60 and must have applied for the retirement benefits to which they are entitled.

THE SENIORS INDEPENDENCE PROGRAM

This program, introduced in 1988, funds health, education or social welfare projects that improve the quality of life for seniors. The emphasis of the program is on community-based projects involving seniors and promoting independent living. The program includes both extended projects and conferences and workshops at the local, regional and national level.

THE NEW HORIZONS PROGRAM

This was established in 1972 to reduce the social isolation or loneliness of the elderly. Program grants help senior citizens' groups help themselves while contributing to their communities. In 1989-90, $16 million was spent on over 2,000 New Horizons projects.

PROVINCIAL INCOME SUPPLEMENTS

All but four provincial governments provide monthly, quarterly or annual income supplements for the elderly. Three provinces and both territories also extend benefits to SPA recipients. Manitoba covers residents over 55 whose incomes do not exceed specified levels. Alberta covers low-income widows and widowers over 55. Saskatchewan has a provincial retirement pension program for residents not covered by other plans, and also supplements these other plans when necessary.

8.5 FAMILIES

FAMILY ALLOWANCES

The federal Family Allowances program provides a monthly supplement to Canadian families for each dependent child up to age 18. Benefits were set at $20 a month in 1973, and are indexed annually to the cost of living. Normally, the allowances are paid to the mother of the child.

In 1990, the basic Family Allowance payment was $33.33 a month for each child cared for in the parental home. For children under 18 who are in the care of institutions, welfare agencies, government agencies or foster parents, a special monthly benefit of $49.72 is paid.

The Family Allowances Act, 1973, allows provincial governments to specify aid based on age of the child, number of children in the family, or both. Only Quebec and Alberta exercise this option; Quebec also provides a supplement to the federal Family Allowance.

In 1989-90, about 3.7 million families received Family Allowances totalling more than $2.6 billion. The Child Tax Credit and a variety of provincial initiatives provide additional support to families.

CHILD TAX CREDIT

In 1979, the federal government introduced an annual refundable Child Tax Credit. Families apply through a special form attached to the annual federal personal income tax return. A credit of $565 for each child was payable in 1990 to applicants whose net income for 1989 was below $24,355; the benefit is reduced by 5% of net income above this level. Prepayment of the credit is available to low-income families who received the Child Tax Credit in the previous year.

For the 1988 tax year, a supplement to the Child Tax Credit was introduced for families with children under six years of age, provided the families claimed no child care expenses. For the 1988 tax year, just under $2 billion was paid to about 2.3 million families. The maximum supplement for the 1989 tax year was $200 for each child. Two-thirds of this $200 supplement is also included in prepayments for low-income families.

In 1987, a National Strategy on Child Care was developed by Health and Welfare Canada to give parents more choices in caring for their children and to improve the availability, affordability and quality of child care in Canada.

PROVINCIAL INCOME SUPPLEMENTS FOR FAMILIES

Several provinces offer income supplements to low-income families. In 1988, Quebec initiated its Parental Wage Subsidy Program, which supplements employment income, partially reimburses day care expenses and provides special benefits to families with high shelter costs. For families with children, this program replaces the Work Income Supplement Program. Ontario's Work Incentive Program supplements social assistance for recipients who return to work; since October 1989, however, improvements to Ontario's social assistance system have largely superseded this program. Manitoba's Child Related Income Support Program and Saskatchewan's Family Income Plan support low-income families with children.

Family Violence Initiative In 1988, the federal government increased assistance to Canadian families affected by violence. New funds will be allocated to six departments to modify and expand their activities.

FAMILY ALLOWANCE

Canada's "Baby Bonus" came into effect in July of 1945, following Prime Minister Mackenzie King's promise the year before that the federal government would pay $5-$8 per month for every child under 15 years of age. In 1943, the Mackenzie King government had frozen salaries at 1926-29 levels in an effort to control wartime inflation. When it proved difficult for people to cover expenses at these levels, the government opted for allowance payments to ease family suffering while maintaining the wartime economy.

Although the war ended a few months after the first payments were made, the family allowance system carried on and remains an important universal program in Canada. By 1973, allowances had been extended to cover dependent children to the age of 18. Benefits were increased to $20 a month and a new provision was introduced to index the payments annually to the cost of living. Today, families receive $33.33 for each child in the home (except in Quebec and Alberta, the only provinces that exercise the right to set their own rates).

In 1989-90, about 3.7 million families received federal family allowance payments for 6.6 million children, amounting to $2.6 billion.

8.6 VETERANS OF THE CANADIAN FORCES

National Archives/A 1332

Canadian soldiers returning from the Battle of Vimy Ridge during World War One.

B.J. Woodruff/National Archives of Canada/C 11272

Field ambulance, 1914.

Assistance for veterans and their dependents is administered by the Department of Veterans Affairs, the Canadian Pension Commission, the Veterans Appeal Board, and the Bureau of Pensions Advocates. Veterans Affairs provides medical treatment, in-home care, housing, educational assistance, counselling and other services through regional and district offices across Canada. The Canadian Pension Commission administers most aspects of the Pension Act, the Compensation for Former Prisoners of War Act, and parts of the Civilian War Pensions and Allowances Act.

PENSIONS FOR DEATH AND DISABILITY

Under the Pension Act, Canadians affected by injuries or diseases incurred during service with the Canadian forces qualify for pensions, as do dependents of a disabled member of the forces or the dependents of a war veteran. Disability pension rates are set by the Pension Act and are indexed to account for inflation.

Under the Compensation for Former Prisoners of War Act, former prisoners of war and their dependents receive regular payments, which may be in addition to a disability pension.

WAR VETERANS ALLOWANCE

The War Veterans Allowance Act assists war veterans who, because of age or incapacity, can no longer maintain their employment income at a specified level. Widows, widowers and orphans of qualified veterans are also eligible for benefits.

CIVILIAN WAR ALLOWANCE

Under the Civilian War Pensions and Allowances Act, benefits are available to some groups of civilians and their widows, widowers and orphans. The Veterans Appeal Board is the court of appeal for these benefits. The Board ensures that the decisions of district authorities are consistent with the intent of the War Veterans Allowance Act and the Civilian War Pensions and Allowances Act, and that the acts are applied uniformly across Canada.

VETERANS' SERVICES

This branch manages health, economic support and special programs for veterans and their spouses, widows/widowers and children. Civilians who served in close support of the armed forces in wartime are also eligible for these programs.

Special programs meet specific needs or help perpetuate the memory of deceased veterans. These programs include the Assistance Fund, the Educational Assistance Program, funeral and burial assistance, veterans' insurance, and the maintenance of veterans' cemeteries, plots and memorials in Canada and abroad.

Health care and treatment for veterans is available throughout Canada at veterans' hospitals and homes, in private facilities funded by Veterans Affairs, and in individual homes and communities. Outside Canada, Veterans Affairs pays for health care and treatment of conditions resulting from war service. Prosthetic devices that help minimize handicaps are also paid for by Veterans Affairs. The Veterans Independence Program helps aging veterans remain independent and healthy in their own homes and communities.

The Bureau of Pensions Advocates provides free legal aid to individuals seeking to establish claims under the Pension Act, the Civilian War Pensions and Allowances Act and allied statutes and orders. The Bureau will initiate claims, search records, identify evidence, counsel applicants, and prepare and present claims to the Canadian Pension Commission, and to the Commission's Entitlement and Assessment Boards. The Bureau also represents War Veterans Allowance Act applicants on appeals to the Veterans Appeal Board.

8.7 NATIVE CANADIANS

Indian and Northern Affairs Canada (INAC) has four major objectives: to ensure that services for native peoples are comparable to those available to other Canadians; to increase Indian participation in the design and operation of social service programs; to strengthen family life and encourage independence; and to help other government and private agencies provide social services to Indians.

The Social Development Program helps individuals and families residing on reserves. The program gives allowances for basic requirements such as food, clothing and shelter, as well as for special needs such as therapeutic diets or basic household appliances.

INAC counselling services help individuals achieve independence and self-sufficiency. Bands can use social assistance funds to create jobs and training opportunities. Employment projects provide additional community benefits such as improved roads, housing, or day care.

The Child and Family Services program funds child protection services; institutional, foster and group home placements; and counselling and prevention services to maintain family unity. These services are delivered through provincial agencies or through the expanding network of Indian Child and Family Services Agencies.

Adult care helps the elderly and the physically or mentally handicapped maintain their independence. Services include homemaking assistance, foster care and institutional care.

INAC also offers guidance and financial support to band councils and their staff, and funds projects such as drop-in centres, hotlines and rehabilitation counselling. Particular emphasis is placed on increasing Indian control of social development services. In 1989-90, 90% of Canada's Indian bands administered their own Social Assistance program.

8.8 INCOME SECURITY

UNEMPLOYMENT INSURANCE

During the Great Depression of the 1930s, the federal government began to provide basic financial support to destitute families. In 1940, the British North America Act was amended to introduce a nationwide program of unemployment insurance, funded through employer and employee contributions.

Originally designed to protect low-income earners, by 1971 the Unemployment Insurance program covered virtually the entire labour force. The program was also broadened to provide benefits for extended illnesses, for individuals leaving the labour force temporarily because of a pregnancy or adoption, for unemployed fishermen, and for those in national training programs, work-sharing projects, or job training.

PROVINCIAL SOCIAL ASSISTANCE

Each province designs and administers its own social assistance program, which the federal government partly funds. Most provincial governments cover both long- and short-term assistance. In Nova Scotia, Ontario and Manitoba, the provincial government covers long-term assistance, while short-term and emergency assistance is the responsibility of municipalities.

Social assistance covers the cost of food, shelter, fuel, clothing, items of special need and other essential items. Services such as training and counselling and health care may also be provided. Benefit levels vary by province and may also be affected by the applicant's age, health and employability.

WORKERS' COMPENSATION

Provincial workers' compensation programs provide income compensation and medical and rehabilitative services for those injured at work. The programs are administered by boards on behalf of the province's employers, who fund the programs, with the contribution varying according to the type of enterprise.

National Film Board/National Archives of Canada/C 45315

Family allowance office in Charlottetown, PEI, the city where the plan was introduced in Canada.

Indian and Northern Affairs Canada

National Metal Industries, Saskatchewan, 1985.

WORKER COMPENSATION

An important aspect of the Canadian "safety net" — the support offered by the society as a whole for those in unfortunate circumstances — is the system of worker compensation for on-job accidents. A hundred years ago a different principle was involved: workers who had dangerous jobs generally received higher wages to compensate them for the risks inherent in their work. But if they were injured or killed in an accident caused by their own or a colleague's negligence, no one could be sued.

Legislation towards the end of the 19th century introduced the idea of employer responsibility in the case of negligence, and by 1911, most Canadian workers could count on basic protection. Then in 1914, Ontario introduced the principle of making compensation for accidents a matter for an industry as a whole, rather than the liability of a particular employer. The idea quickly became popular with other provinces and saw the creation of government boards administering accident funds made up of compulsory contributions from employers assessed according to the hazards of their industry.

In 1924, 1,281 fatal job-related accidents were recorded in Canada; by 1988, when fatal job-related diseases were included in the statistic, the number was 1,148.

TAX CREDITS

In nearly all provinces, homeowners and renters are eligible for tax credits, rebates, and shelter subsidies or grants. These concessions help families and the elderly meet the high costs of shelter.

The first tax credit programs refunded or deferred property and school taxes levied on the residences of elderly homeowners. Since the 1970s, assistance has been offered to renters, particularly the elderly, either through direct rebates, or through shelter allowances that pay all or part of rents exceeding a portion of income ranging from 20% to 30%. Rebates are administered by income tax or property tax collection authorities; shelter allowances are usually paid by provincial housing authorities. Some provinces have expanded their tax credit programs in recent years. For example, Ontario now offers a home-ownership savings plan tax credit, and Manitoba provides a cost-of-living tax credit. In total, the provinces offer over 40 tax credit/rebate and shelter assistance programs.

TRAINING ALLOWANCES AND INCOME SUPPLEMENTS

Employment and Immigration Canada training helps workers respond to the demand for special work skills. The Canadian Jobs Strategy gives participants allowances to encourage them to upgrade their abilities. (See Chapter 5 for more information on job training.)

Various types of financial support are available to disabled people. Many receive provincial social assistance; other receive benefits from provincial vocational rehabilitation or income assistance programs, or from workers' compensation, federal training allowances or Unemployment Insurance.

The costs of provincial vocational programs for the physically and mentally handicapped programs are shared by the federal government. These programs help disabled people maintain their independence through acquiring jobs, becoming self-employed or finding sheltered employment or other paid work. In 1986-87, about $176 million was spent on these programs.

Income assistance for the disabled includes British Columbia's Handicapped Benefits under the Guaranteed Available Income Need program, Alberta's Assured Income for the Severely Handicapped, and Ontario's Guaranteed Annual Income System for the Disabled. Most provinces offer financial assistance to families caring for a disabled child at home.

8.9 DEVELOPMENT

Social security means more than income security and social assistance programs. It also means reaching out for new ideas and approaches.

The National Welfare Grants program develops and strengthens social services by funding social welfare research. Grants are available for provincial and municipal social service departments, non-governmental organizations and universities. The program also offers fellowships for advanced training in social welfare. In 1989-90, program expenditures were over $7.5 million.

As part of an innovative response to a serious social problem, the federal government helps the provinces expand and improve alcohol and drug treatment and rehabilitation programs, particularly for young people.

A 1987 Statistics Canada survey found that 27% of Canada's adult population participates in voluntary work, much of which focuses on health and welfare. As of October 1990, there were about 64,000 registered charitable organizations. In health and welfare, these agencies offered community support ranging from direct care for individuals to community services.

Internationally, Canada plays an important role in the social development activities of the United Nations, particularly through the United Nations International Children's Emergency Fund. Canada is also active in the social programs of the Organization for Economic Co-operation and Development (OECD). Information on social affairs is exchanged with various international agencies and with the Council of Europe, the OECD, the Overseas Development Institute and the social affairs departments of other countries. Canada also belongs to the International Social Security Association, the International Council on Social Welfare, and the social security program of the International Labour Organization. Through these international ventures, Canada contributes its own experience while receiving valuable information on the maintenance and development of social security in other countries.

Sources

Health and Welfare Canada.
Indian and Northern Affairs Canada.
Statistics Canada.
Veterans Affairs Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Unemployment Insurance Statistics*, monthly. 73-001
- *Annual Report, Benefit Periods Established and Terminated Under the Unemployment Insurance Act*, annual. 73-201
- *Workmen's/Workers' Compensation: Social Security, Provincial Programs, 1980*, 1980. 86-501
- *Criminal Injuries Compensation*, triennial. 86-502
- *Social Security, National Programs, Volume 2, Unemployment Insurance, 1984*, 1984. 86-506
- *Social Security, National Programs, Volume 3, Canada and Quebec pension plans, 1984*, 1984. 86-507
- *Social Security, National Programs, Volume 4, Family Allowances and Related Programs, 1982*, 1982. 86-508
- *Social Security, National Programs, Old Age Security, Guaranteed Income Supplement and Spouse's Allowance, Volume 5, 1982*, 1982. 86-509
- *Social Security, National Programs, Volume 6, Social Allowances and Services, 1982*, 1982. 86-510
- *Social Security, National Programs, Volume 7, Other Programs, 1982*, 1982. 86-511
- *Health and Social Support, 1985*, 1987. 11-612

TABLES

LEGEND

..	*not available*	*e*	*estimate*
...	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

8.1 CANADA ASSISTANCE PLAN (CAP), GENERAL ASSISTANCE BENEFICIARIES AND FEDERAL-PROVINCIAL BENEFIT EXPENDITURES, 1985-90[1]

Province or territory	General assistance beneficiaries[2] (including dependents)					
	1985	1986	1987	1988	1989	1990
Newfoundland	49,100	47,000	50,500	47,900	44,800	47,900
Prince Edward Island	9,600	9,200	9,300	8,900	8,300	8,600
Nova Scotia	73,600	72,100	73,000	73,800	75,600	78,900
New Brunswick	69,100	68,800	73,700	70,600	67,700	67,200
Quebec	708,700	693,900	649,600	594,000	559,300	555,900
Ontario	485,800	485,800	518,400	533,500	588,200	675,700
Manitoba	62,800	62,600	60,600	62,700	63,000	66,900
Saskatchewan	64,000	62,700	62,100	60,300	57,200	54,100
Alberta	124,100	126,600	150,500	149,800	151,700	148,800
British Columbia	267,600	255,700	247,700	241,100	230,000	216,000
Yukon	1,500	1,400	1,200	1,100	900	1,000
Northwest Territories	7,400	7,100	8,300	9,300	9,400	10,000
Canada	1,923,300	1,892,900	1,904,900	1,853,000	1,856,100	1,931,000

	General assistance expenditures (total federal-provincial[3]) ($'000,000)					
	1985	1986	1987	1988	1989	1990
Newfoundland	86.1	85.2	108.0	107.8	109.3	119.2
Prince Edward Island	21.3	22.4	23.2	24.6	24.9	27.5
Nova Scotia	139.5	143.3	165.2	178.5	204.9	219.9
New Brunswick	192.9	206.7	229.3	235.0	227.5	236.2
Quebec	2,055.3	2,221.9	2,146.7	2,118.1	2,121.5	2,144.0
Ontario	1,406.4	1,479.5	1,642.8	1,831.5	2,124.4	2,425.1
Manitoba	149.9	156.8	179.8	177.8	219.1	206.3
Saskatchewan	173.0	190.7	215.5	215.0	200.1	189.3
Alberta	419.6	481.7	543.4	593.0	655.7	683.5
British Columbia	866.5	879.0	859.7	895.1	878.4	872.3
Yukon	2.0	2.2	—	1.3	6.1	2.8
Northwest Territories	9.3	11.0	12.0	16.2	14.4	20.3
Canada	5,521.7	5,880.4	6,125.7	6,393.9	6,786.3	7,146.3

[1] *Fiscal years ending March 31st.*

[2] *Beneficiaries are as of March 31st of each fiscal year.*

[3] *Total federal-provincial expenditures are estimates. They have been calculated by doubling the federal amount paid for claims received each year.*

8.2 SENIOR CITIZENS' BENEFITS, BENEFICIARIES AND NET BENEFIT EXPENDITURES, 1985-90[1]

Province or territory	Old Age Security (OAS), annual average number of beneficiaries					
	1985	1986	1987	1988	1989	1990
Newfoundland	48,086	49,686	50,808	52,079	53,076	53,974
Prince Edward Island	15,618	15,835	16,029	16,199	16,347	16,545
Nova Scotia	99,467	102,166	104,402	106,671	108,412	110,104
New Brunswick	76,248	78,238	80,068	82,239	83,836	85,369
Quebec	616,580	635,335	655,714	677,648	697,799	719,400
Ontario	922,413	955,854	990,665	1,026,282	1,058,044	1,091,477
Manitoba	128,645	131,629	134,201	137,063	139,305	141,659
Saskatchewan	123,448	126,197	128,481	131,073	133,086	135,293
Alberta	174,177	181,436	188,579	196,006	202,528	209,585
British Columbia	317,926	331,271	344,830	358,528	370,758	383,422
Yukon	762	804	843	894	918	970
Northwest Territories	1,343	1,349	1,400	1,428	1,451	1,491
International operations[2]	4,415	6,961	10,657	14,265	17,477	21,111
Canada	2,529,129	2,616,762	2,706,676	2,800,375	2,883,037	2,970,401

	OAS, net benefit expenditures ($'000,000)					
	1985	1986	1987	1988	1989	1990
Newfoundland	156.5	168.4	179.1	191.6	203.2	216.7
Prince Edward Island	50.7	53.4	56.3	59.4	62.4	66.2
Nova Scotia	323.0	345.4	367.8	391.7	414.2	441.4
New Brunswick	247.7	264.5	281.8	301.4	320.1	341.3
Quebec	2,006.5	2,157.3	2,314.1	2,493.6	2,671.0	2,884.8
Ontario	3,000.8	3,244.5	3,495.0	3,768.0	4,041.2	4,350.1
Manitoba	416.8	444.4	471.3	501.7	529.9	564.4
Saskatchewan	400.9	426.4	452.3	481.1	507.8	541.5
Alberta	568.3	616.2	666.4	720.3	774.3	837.4
British Columbia	1,032.4	1,120.6	1,214.8	1,314.7	1,411.3	1,526.9
Yukon	2.6	2.8	3.0	3.3	3.6	4.0
Northwest Territories	4.4	4.7	5.1	5.3	5.7	6.2
International operations[2]	5.3	9.1	12.9	15.6	18.7	23.2
Canada	8,215.9	8,857.7	9,520.0	10,247.7	10,963.4	11,803.8

	Guaranteed Income Supplement (GIS), annual average number of beneficiaries					
	1985	1986	1987	1988	1989	1990
Newfoundland	38,291	39,652	40,196	41,325	41,640	41,770
Prince Edward Island	10,795	10,914	10,897	10,903	10,872	10,810
Nova Scotia	62,886	64,525	64,461	65,417	65,031	64,385
New Brunswick	49,790	51,172	51,562	52,547	52,672	52,555
Quebec	376,382	385,965	391,496	403,480	408,919	412,510
Ontario	373,840	386,762	393,438	402,753	400,207	393,091
Manitoba	64,751	66,343	66,881	67,913	67,747	66,725
Saskatchewan	60,231	61,985	62,982	64,049	64,362	64,277
Alberta	82,320	85,626	87,892	91,735	92,899	93,145
British Columbia	134,663	141,528	144,362	149,029	150,845	150,598
Yukon	382	406	433	464	455	468
Northwest Territories	1,075	1,092	1,135	1,179	1,172	1,193
International operations[2]	2,033	3,051	4,327	5,878	6,711	7,569
Canada	1,257,439	1,299,019	1,320,059	1,356,672	1,363,532	1,359,096

8.2 SENIOR CITIZENS' BENEFITS, BENEFICIARIES AND NET BENEFIT EXPENDITURES, 1985-90[1] (concluded)

Province or territory	GIS, net benefit expenditures ($'000,000)					
	1985	1986	1987	1988	1989	1990
Newfoundland	99.0	110.0	114.8	120.5	125.1	130.4
Prince Edward Island	27.0	29.6	30.5	31.6	32.4	33.4
Nova Scotia	150.4	166.4	172.0	178.0	182.4	186.5
New Brunswick	121.4	134.5	139.5	145.5	150.4	155.2
Quebec	902.3	1,009.9	1,043.2	1,097.9	1,150.1	1,188.8
Ontario	838.8	944.5	978.2	1,020.0	1,050.4	1,066.6
Manitoba	150.4	166.4	172.0	178.5	184.8	187.4
Saskatchewan	144.0	160.1	166.7	174.0	180.9	185.7
Alberta	192.8	217.4	228.1	242.7	254.7	264.4
British Columbia	310.3	350.1	366.7	384.9	404.3	416.4
Yukon	1.1	1.3	1.4	1.5	1.5	1.5
Northwest Territories	3.3	3.7	4.0	4.2	4.3	4.5
International operations[2]	12.2	25.4	34.2	38.8	44.5	52.4
Canada	2,953.0	3,319.4	3,451.4	3,618.1	3,765.8	3,873.2

	Spouse's Allowance (SPA), annual average number of beneficiaries					
	1985	1986	1987	1988	1989	1990
Newfoundland	3,559	4,287	5,108	5,109	4,994	5,009
Prince Edward Island	785	961	1,090	1,086	1,010	971
Nova Scotia	4,845	5,967	7,016	6,991	6,609	6,399
New Brunswick	4,212	5,264	6,109	5,870	5,732	5,622
Quebec	27,971	35,591	44,202	44,744	44,099	42,709
Ontario	25,287	31,218	41,568	41,303	38,239	34,744
Manitoba	4,563	5,562	6,563	6,294	5,852	5,451
Saskatchewan	4,181	4,984	5,911	5,874	5,646	5,494
Alberta	5,760	6,813	8,689	8,862	8,706	8,336
British Columbia	9,090	11,121	13,594	13,523	12,866	12,026
Yukon	23	30	52	51	46	41
Northwest Territories	68	68	97	110	116	129
International operations[2]	72	118	221	342	364	377
Canada	90,415	111,984	140,219	140,159	134,279	127,308

	SPA, net benefit expenditures ($'000,000)					
	1985	1986	1987	1988	1989	1990
Newfoundland	13.4	17.6	22.3	22.6	22.1	22.7
Prince Edward Island	2.5	3.6	4.4	4.5	4.3	4.2
Nova Scotia	14.6	20.4	26.1	26.1	25.1	24.7
New Brunswick	13.2	18.6	23.5	23.5	22.8	23.0
Quebec	78.6	111.7	147.5	149.5	151.2	152.4
Ontario	61.0	87.5	130.3	134.7	128.1	118.8
Manitoba	12.7	17.2	22.1	21.9	21.1	20.2
Saskatchewan	12.1	16.0	20.4	20.7	20.7	20.4
Alberta	15.9	21.3	29.4	30.8	30.3	30.1
British Columbia	24.0	32.5	44.4	44.9	44.0	42.0
Yukon	0.1	0.1	0.2	0.2	0.2	0.2
Northwest Territories	0.4	0.4	0.6	0.7	0.8	0.8
International operations[2]	0.4	0.8	1.9	2.4	2.7	2.6
Canada	248.8	347.8	473.2	482.5	473.4	462.1

[1] *Fiscal years ending March 31st.*

[2] *All persons paid under international agreements, including persons outside Canada.*

8.3 CANADA PENSION PLAN AND QUEBEC PENSION PLAN BENEFICIARIES AND NET BENEFIT EXPENDITURES, 1980-90[1]

Year	Annual average number of beneficiaries				
	Retirement pensions	Disability pensions	Survivors' pensions[2]	Children's benefits[3]	Total
1980	939,184	98,081	283,747	182,843	1,503,855
1981	1,042,907	106,559	335,861	185,838	1,671,165
1982	1,124,143	116,089	373,738	187,374	1,801,344
1983	1,202,677	128,535	412,183	189,888	1,933,283
1984	1,284,439	143,623	452,832	194,672	2,075,566
1985	1,401,054	159,306	496,753	193,268	2,250,381
1986	1,518,571	175,271	536,611	190,250	2,420,703
1987	1,651,384	187,945	582,690r	188,250	2,610,269r
1988	1,891,972	196,365	647,952	186,340	2,922,629
1989	2,078,758	219,939	704,293	198,539	3,201,529
1990	2,266,385	235,433	750,090	199,217	3,451,125
	Net benefit expenditures[4] ($'000,000)				
	Retirement pensions	Disability pensions	Survivors' pensions[2]	Children's benefits[3]	Total
1980	1,337.3	269.4	488.9	118.1	2,213.7
1981	1,668.3	328.6	590.1	128.7	2,715.7
1982	2,070.5	392.4	709.1	140.0	3,312.0
1983	2,564.6	498.2	866.2	159.4	4,088.4
1984	3,104.7	617.4	1,036.7	179.3	4,938.1
1985	3,691.2	751.8	1,218.4	190.9	5,852.3
1986	4,325.9	879.1	1,378.6	203.3	6,786.9
1987	5,054.0	1,045.0r	1,547.2r	207.6	7,854.0r
1988	6,281.1	1,408.5	1,824.5	221.6	9,735.7
1989	7,234.6	1,631.9	2,008.3	233.8	11,108.6
1990	8,159.0	1,799.2	2,215.8	245.0	12,419.1

[1] *Fiscal years ending March 31st*

[2] *"Survivors'" includes one-time death benefits.*

[3] *"Children's benefits" includes benefits to children of disabled contributors and orphans.*

[4] *Payments outside Canada are included as of 1979-80.*

8.4 FAMILY ALLOWANCES, BENEFICIARIES AND NET BENEFIT EXPENDITURES, 1988-90[1]

Province or territory	Annual average number of children[2]		
	1988	1989	1990
Newfoundland	177,417	172,552	168,200
Prince Edward Island	35,665	35,691	35,702
Nova Scotia	229,426	227,152	225,329
New Brunswick	196,401	193,523	191,166
Quebec	1,616,472	1,610,752	1,613,004
Ontario	2,313,690	2,334,322	2,354,698
Manitoba	291,169	290,182	289,008
Saskatchewan	294,011	291,193	287,437
Alberta	674,200	676,857	684,946
British Columbia	728,917	735,811	749,021
Yukon	7,460	7,605	7,663
Northwest Territories	20,365	20,485	20,753
Canada	6,585,193	6,596,125	6,626,927
	Annual average number of families		
	1988	1989	1990
Newfoundland	95,596	94,528	93,616
Prince Edward Island	18,717	18,858	18,935
Nova Scotia	128,956	128,195	127,506
New Brunswick	109,695	108,957	108,323
Quebec	938,360	938,001	940,770
Ontario	1,293,212	1,304,454	1,313,613
Manitoba	153,467	153,220	152,761
Saskatchewan	146,954	145,355	143,128
Alberta	356,708	356,721	359,941
British Columbia	403,028	405,625	411,609
Yukon	4,168	4,261	4,303
Northwest Territories	9,504	9,645	9,823
Canada	3,658,365	3,667,820	3,684,328
	Net benefit expenditures ($'000,000)		
	1988	1989	1990
Newfoundland	68.6	67.6	66.8
Prince Edward Island	13.8	14.0	14.2
Nova Scotia	88.9	89.2	89.6
New Brunswick	76.0	75.9	76.0
Quebec	627.8	635.3	646.0
Ontario	904.4	926.8	947.6
Manitoba	113.3	114.5	115.6
Saskatchewan	114.1	114.6	114.5
Alberta	263.1	266.4	272.0
British Columbia	283.5	290.3	299.6
Yukon	2.9	3.0	3.1
Northwest Territories	8.0	8.2	8.4
Canada	2,564.4	2,605.8	2,653.4

[1] *Fiscal years ending March 31st.*

[2] *Number of children on whose behalf Family Allowances are paid.*

8.5 WAR VETERANS' ALLOWANCES AND PENSIONS, 1984-90

Province	Recipients of allowances[1]						
	1984	1985	1986	1987	1988	1989	1990
Newfoundland	5,277	5,111	4,964	4,845	4,486	4,122	3,863
Prince Edward Island	1,471	1,489	1,387	1,303	1,155	1,024	902
Nova Scotia	8,433	8,161	7,504	7,100	6,239	5,460	4,708
New Brunswick	6,133	5,880	5,459	5,225	4,527	3,955	3,430
Quebec	11,464	11,042	10,258	10,292	9,495	9,049	8,678
Ontario	29,778	30,665	29,064	28,525	24,288	20,685	17,581
Manitoba	4,054	3,971	3,689	3,607	3,125	2,682	2,300
Saskatchewan	3,445	3,276	3,100	3,081	2,768	2,430	2,120
Alberta[2]	4,943	4,980	4,831	4,854	4,239	3,714	3,254
British Columbia[3]	12,253	12,263	11,917	11,822	10,435	9,044	7,586
Outside Canada	1,387	1,519	1,653	1,746	1,901	2,117	2,325
Canada	88,638	88,357	83,826	82,400	72,658	64,282	56,747
	Benefit expenditures[1] ($'000,000)						
	1984	1985	1986	1987	1988	1989	1990
Newfoundland	25.0	26.1	24.5	23.0	20.3	17.4	15.4
Prince Edward Island	8.2	8.6	7.9	6.9	5.6	4.5	3.5
Nova Scotia	43.7	45.1	41.5	36.5	29.8	24.0	19.3
New Brunswick	33.8	34.4	31.4	27.7	22.6	17.8	13.9
Quebec	57.8	61.9	58.6	55.5	52.8	52.0	51.8
Ontario	135.4	156.0	155.7	144.9	120.4	97.7	78.3
Manitoba	18.1	21.3	18.7	17.5	14.4	11.6	9.0
Saskatchewan	16.6	16.0	16.0	14.8	12.2	9.8	7.7
Alberta[2]	22.5	25.7	25.9	24.9	20.6	17.3	13.7
British Columbia[3]	52.1	58.8	61.0	59.4	51.5	40.7	31.0
Outside Canada	8.5	11.0	12.8	14.4	15.4	17.7	20.7
Canada	421.7	464.9	453.9	425.4	365.7	310.5	264.4
	Payments, veteran disability and dependent pensioners ($'000,000)						
	1984	1985	1986	1987	1988	1989	1990
Newfoundland	8.5	8.8	9.7	9.9	10.4	10.9	12.2
Prince Edward Island	8.7	9.1	10.1	10.8	60.1	62.5	57.9
Nova Scotia	46.0	48.6	55.3	58.5	11.0	11.8	13.2
New Brunswick	28.5	29.8	33.3	34.9	36.8	39.1	42.8
Quebec	74.4	77.2	87.4	92.4	100.2	104.0	109.4
Ontario	258.4	267.6	291.5	263.4	272.6	283.6	317.0
Manitoba	42.9	44.2	47.1	49.4	50.5	52.4	54.9
Saskatchewan	25.9	26.8	28.9	31.0	32.7	33.9	36.7
Alberta	45.5	46.8	50.5	52.3	54.3	57.5	62.4
British Columbia	108.0	112.1	123.2	128.4	132.7	139.9	152.9
Outside Canada	..				37.5	37.0	38.4
Canada[4]	646.8	671.0	737.0	768.2	798.6	832.5	897.8

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[1] *As of March 31.*

[2] *Includes data for Northwest Territories.*

[3] *Includes data for Yukon.*

[4] *Includes persons who reside in the territories and outside Canada.*

8.6 SOCIAL SECURITY EXPENDITURES, BY PROGRAM, 1986-90[1] (MILLION DOLLARS)

Program	1986[r]	1987	1988	1989	1990
Federal social security					
Canada Assistance Plan					
General assistance[2]	5,880.4	6,125.7	6,393.9	6,786.3	7,146.3
Homes for special care[2]	788.5	634.6	729.0	854.4	846.9
Child welfare[2]	246.0	209.2	249.1	313.8	270.8
Work activity and other welfare[2]	1,345.1	1,570.0	1,691.7	1,838.0	2,253.1
Child Tax Credit[3,5]	1,537.3	1,639.4	1,967.9	2,200.0	2,500.0
Canada and Quebec Pension plans					
Retirement	4,325.9	5,054.0	6,281.1	7,234.6	8,159.0
Survivors	1,378.6	1,547.2	1,824.5	2,008.3	2,215.8
Disability	879.1	1,045.0	1,408.5	1,631.9	1,799.2
Children's	203.3	207.7	221.6	233.8	245.0
Family Allowances	2,500.6	2,534.4	2,564.4	2,605.7	2,653.5
National training program[4]	165.8	—	—	—	—
Canadian jobs strategy	643.6	1,542.8	1,528.8	1,501.9	1,550.7
OAS/GIS/SPA					
Old Age Security	8,857.7	9,520.0	10,247.9	10,963.4	11,803.8
Guaranteed Income Supplement	3,319.4	3,451.4	3,618.2	3,765.8	3,873.3
Spouses' Allowances	347.8	473.2	482.6	473.2	462.2
Registered Indians					
Social assistance	255.2	278.1	314.4	351.7	390.0
Social services	82.3	93.1	99.6	119.1	131.4
Unemployment insurance					
Unemployment	8,887.3	9,317.8	9,158.8	9,408.4	10,077.6
Sickness	223.5	250.3	292.3	334.1	365.0
Maternity	443.1	484.7	524.6	583.4	657.5
Retirement	21.8	22.2	23.4	22.3	22.2
Fishing	188.0	216.9	247.8	265.4	271.8
Training	234.8	233.5	226.8	242.4	293.9
Work sharing	19.5	23.7	14.3	18.4	25.7
Job creation	108.6	90.7	88.9	104.9	104.7
Veterans' benefits					
War veterans' allowances	453.9	425.4	365.7	310.5	264.4
Disability and dependents	696.9	729.0	798.6	832.5	897.8
Vocational rehabilitation of disabled persons[2]	148.0	175.6	185.3	193.3	213.0

8.6 SOCIAL SECURITY EXPENDITURES, BY PROGRAM, 1986-90[1] (MILLION DOLLARS) (concluded)

Program	1986[r]	1987	1988	1989	1990
Provincial social security					
Workers' compensation					
Permanent disability[3]	907.0	1,172.0	1,209.4	1,286.0	1,463.5
Temporary disability[3]	1,331.1	1,483.7	1,632.3	1,767.9	1,934.1
Medical aid[3]	558.8[r]	750.9	825.4	776.0	860.6
Tax credits and rebates[5]	1,690.3[r]	1,765.6	1,750.5	1,785.6	1,821.3
Other welfare programs[5]	2,296.7[r]	2,856.5	2,987.3	3,124.7	3,268.4
Municipal social security[5,6]	608.3[r]	667.0	749.2	821.8	901.6
Total	51,610.3[r]	56,591.5	60,703.8	64,759.5	69,743.9

[1] *Fiscal years ending March 31st, except as noted.*

[2] *Total federal-provincial expenditures.*

[3] *Calendar year data.*

[4] *The national training program was phased out in 1986.*

[5] *Estimates for 1989 and 1990.*

[6] *Excluding CAP cost-sharable expenditures.*

Sources

Health and Welfare Canada.
Veterans Affairs Canada.

THE NATION

Section 3

Chapter 9

National Film Board/National Archives of Canada/PA 122955

GOVERNMENT

9.1 INTRODUCTION

IN 1867, THE FOUR BRITISH COLONIES of Nova Scotia, New Brunswick, Upper Canada and Lower Canada (now the provinces of Ontario and Quebec) were united under the British North America (BNA) Act as the Dominion of Canada.

The BNA Act created institutions modelled on the British system, contained guarantees respecting the use of English and French in Parliament, the legislature of Quebec and the courts of both jurisdictions, and outlined provincial and federal powers. The Act also left the door open for other colonies and territories to join Confederation at a later date.

The BNA Act gave the federal government jurisdiction over defence and external relations, criminal law, money and banking, trade, transportation, citizenship and Indian affairs. The provinces assumed responsibility for education, health and welfare, civil law, natural resources and local government. Joint jurisdiction was granted in areas such as agriculture and immigration.

In 1870, the Hudson's Bay Company (HBC) surrendered its vast territories to the British Crown, which transferred these to Canada. In exchange, the Canadian government gave the HBC £300,000, 5% of the fertile southern portion of the territory, and blocks of land around HBC trading posts. From the HBC territory, new provinces were created — Manitoba in 1870, followed by Saskatchewan and Alberta in 1905.

British Columbia entered Confederation in 1871 on the condition that the federal government construct a rail line linking the new province to Eastern Canada. Prince Edward Island became part of Canada in 1873, while the nation's tenth province, Newfoundland, joined in 1949.

In 1982, Canada's Parliament adopted a new Constitution; at this time, the BNA Act was renamed the Constitution Act, 1867. The 1982 Constitution Act contains the Canadian Charter of Rights and Freedoms as well as other new provisions, including a procedure for amending the Constitution of Canada.

Courtesy of Government House

H.M. Queen Elizabeth II and H.R.H. The Duke of Edinburgh.

9.2 THE CANADIAN SYSTEM

In most democratic countries, government powers are spread among three branches — legislative, executive and judiciary. In Canada, the judiciary is separate, but executive and legislative powers are fused.

Constitutionally, the Queen is Canada's head of state. Her representative in Canada, the Governor General, acts on her behalf on the advice of federal ministers in the Cabinet, the executive committee appointed by the Prime Minister. By convention, the role of the Governor General is purely formal.

The executive proposes legislation, presents budgets to the legislature and implements laws. In the parliamentary tradition inherited from Great Britain, ministers of the executive must resign when they lose the confidence of the legislature.

Bob Cooper/National Archives of Canada/PA-140705

The signing of the Canadian Constitution. Prime Minister Pierre Elliott Trudeau and Her Majesty Queen Elizabeth II, April 1982, with key government officials.

National Archives of Canada/PA-112979

Speaker's procession, opening of Parliament, 1942.

The Cabinet comprises the Prime Minister (leader of the majority party), and ministers chosen by him from among members of his party in the legislature. Generally Cabinet ministers head a government department, but some may be assigned special parliamentary duties, or may act as ministers of state. Together, the Prime Minister and the Cabinet determine government policies.

In the legislature, elected representatives adopt laws and vote on proposals for taxes and other revenues. Canada's legislative power is vested in Parliament, which comprises the head of state, an appointed upper house (the Senate) and an elected lower house (the House of Commons).

Canada has a multi-party system — each party chooses a leader to speak on behalf of the party both within and outside the House of Commons.

By making recommendations to the Governor General, the Prime Minister can in effect appoint Cabinet Ministers, Privy Councillors, lieutenant governors (the Queen's provincial representatives), provincial administrators, Speakers of the Senate, Chief Justices, senators and senior executives of the public service. The Prime Minister also recommends candidates for Governor General to the Queen, usually after consulting with his Cabinet. The Prime Minister controls the Prime Minister's Office, the Privy Council Office, and the federal-provincial relations office.

The judiciary is the final interpreter of Canada's laws. It is independent of government, but must apply the laws enacted by Parliament unless these are unconstitutional or fall outside the jurisdiction of Parliament or provincial legislatures. (An account of Canada's legal system is presented in Chapter 10.)

Federal elections must be held within five years of the previous election. However, the Prime Minister can ask the Governor General to dissolve Parliament at any point within the government's five-year term.

When the government is defeated on a motion on which it has explicitly staked its life or when a vote of non-confidence is passed, the Prime Minister by convention must either resign or ask the Governor General to call an election. If the Prime Minister resigns, the Governor General can ask the leader of the official opposition to form a new government.

If an election (called because the government has lost the confidence of the House of Commons) does not produce a clear majority, the government either resigns or remains in office as a minority government by seeking the confidence of the House. If the government resigns, the Governor General asks the leader of another party, usually the one with the most seats, to become Prime Minister and form the new government.

THE PRIVY COUNCIL AND THE CABINET

Under the Constitution Act, the Queen's Privy Council for Canada is entrusted to aid and advise the Government of Canada. However, this Council meets only on rare ceremonial occasions; its constitutional responsibilities are discharged by the Cabinet.

Membership in the Privy Council is for life. It comprises present and former Cabinet Ministers and Chief Justices of Canada, former Speakers of the Senate and the House of Commons, as well as members of the royal family, and past and present Commonwealth Prime Ministers and provincial premiers. As a condition of office, all Cabinet Ministers must first be sworn into the Privy Council.

The Cabinet exercises its authority through legal instruments called orders-in-council. The Cabinet submits these to the Governor General for approval, which is given in almost all circumstances.

The Prime Minister can appoint parliamentary secretaries from among the members of the House of Commons to assist ministers. These secretaries work under the direction of ministers but have no legal authority.

In the past, the Prime Minister acted as President of the Privy Council; in recent years, this responsibility has been delegated to the government leader in the House of Commons. The President of the Privy Council directs House business for the government.

THE CABINET COMMITTEE SYSTEM

The Cabinet determines the policy underlying proposed legislation. Cabinet usually considers between 40 and 60 bills during a parliamentary session. To make this process manageable, the Prime Minister appoints Cabinet committees to study bills and report back to the full Cabinet.

CANADA'S ELECTORAL SYSTEM

The right of all adults to vote is taken for granted in Canada, but that matter-of-fact statement conceals a wealth of history and reform.

Today, Canadians directly reaffirm their support for Members of the House of Commons or choose new ones in the federal elections that are a mainstay of this country's parliamentary democracy. Men and women MPs make decisions, enact laws and speak out on matters of federal concern for the people they represent.

It was not always so. Early elections in what is now Canada were quite different from today's, and the right to vote and to be a candidate was reserved for a minority of property owners. Women were excluded. Some early elections showed evidence of bribery and corruption.

Elections to some offices were held on Canadian territory in 1647, and in 1758, the settlers of Nova Scotia were the first Canadians to elect a representative assembly. However, elections did not acquire great importance until 90 years later, in 1848, when responsible government was introduced.

Originally in many colonies, each electoral district had only one or two polling stations, and voters often had to make long journeys to vote. Voting took place over several days, and on different dates from one electoral district to another. Intimidation and corruption were common, and whether elections were held at all in some colonies depended on the goodwill of the governor.

Conditions gradually changed. After 1806, all elected assemblies (what we now call provincial legislatures) were elected for fixed terms, and from 1842 onward, polling stations were established in each parish or area. In 1873, the possibility for a single person to sit in the federal House of Commons and in a provincial Legislative Assembly at the same time was abolished.

One of the greatest reforms came in 1874, when both the secret ballot and the practice of holding the entire general election on the same day in each electoral district in Canada, were introduced.

The ***Dominion Elections Act*** *of 1920 marked the beginning of the modern electoral system in Canada. A Chief Electoral Officer was appointed by the House of Commons to supervise the whole process, and the right to vote in federal elections was for the first time determined by a federal statute, rather than by provincial laws, as it had been previously. Advance polling was established for certain categories of voters.*

About the same time, suffrage became almost universal. In 1918, women gained the vote, and within the decade enumeration for both urban and rural areas was introduced.

In 1964, the redrawing of Canada's map of electoral districts was entrusted to independent boundary commissions operating under precise rules, especially regarding the population of districts.

Legislation enacted in 1974 controlled election expenses and ensured that sources of revenue and parties' and candidates' expenses could be made public.

Finally in 1982, the ***Charter of Rights and Freedoms*** *enshrined the fundamental democratic rights of Canadians in the Constitution.*

Laurier House/National Archives of Canada/C 22106

Sir Wilfrid Laurier on the campaign trail.

Duncan Cameron/National Archives of Canada/PA 169760

Sorting through election materials, 1957.

Before a bill is presented to Parliament, it must go through a standard process. Working with public servants in the department, the minister prepares a policy proposal for new or amended legislation. The proposal is addressed formally to Cabinet but is first considered by the relevant policy committee. If approved, the proposal goes to Cabinet.

If the Cabinet confirms the proposal, the Justice Department prepares a draft bill expressing the intent of the proposal in legal terms. This draft bill is first approved by the minister, then is submitted to the Cabinet committee on Legislation and House Planning, where it is examined from a legal rather than a policy point of view. Once this committee finds the bill acceptable (sometimes with modifications), it is referred back to Cabinet for confirmation, then initialled by the Prime Minister and introduced in the House of Commons or the Senate.

The order and manner in which bills are considered in Parliament is the responsibility of the President of the Privy Council (the government House leader) who negotiates these matters

AN EARLY SUFFRAGETTE...

One of Canada's most famous suffragettes, Nellie McClung, played an integral role in the crusade for equal rights for women.

Born in 1873, McClung's involvement in women's rights began when she was 16 years old. She was a teacher by profession and first distinguished herself by allowing school girls to play football, an activity from which they were previously banned in Canadian schools.

She went on to become a prominent member of the Women's Christian Temperance Union, an organization in favour of prohibition. McClung was an impressive speaker and she travelled across Canada arguing passionately for women's rights. She also fought for safer factory conditions and economic independence for women.

Thanks to the efforts of people like Nellie McClung, women were given the right to vote in 1918. In 1919, women were allowed to sit in the House of Commons and in 1929, to be appointed to the Senate.

Jessop/National Archives of Canada/PA 30212

Nellie McClung, 1915.

with counterparts in the opposition parties. If a bill is to be introduced in the Senate, the President of the Privy Council will discuss timing and tactics with the leader of the government in the Senate, who will negotiate with the Senate opposition leader.

9.3 THE LEGISLATURE

THE HOUSE OF COMMONS

The House of Commons is Canada's elected federal legislative body. The number of seats in the House is based on representation by population; after each decennial Census, this number is adjusted and constituencies are redrawn to reflect population changes.

Federal elections are governed by the Canadian Charter of Rights and Freedoms, and the Canada Elections Act. All Canadians aged 18 and older are eligible to vote, with the exception of the chief and assistant chief electoral officers, the returning officer for each district, and persons convicted of illegal practices under the Canada Elections Act. Special voting rules apply to members of the Canadian forces, to federal public servants posted abroad, and to veterans receiving care in certain institutions. Advanced polls and proxy voting accommodate those not able to vote at their local polling stations on election day.

Ballot papers identify candidates and the political parties they represent. Political parties wishing to endorse candidates must register with the office of the chief electoral officer, and a new party wishing to be identified on the ballot must have candidates officially nominated in at least 50 electoral districts 30 days before polling day.

Over the years, parties representing many different viewpoints have elected members to Parliament. Following the November 21, 1988 general election, three parties were represented in the House of Commons: the Progressive Conservatives, who formed the government; the Liberals, the official opposition; and the New Democratic Party.

THE SENATE

The Senate was established to protect the interests of the less populous regions of Canada. Accordingly, Senate membership is based upon regional representation rather than representation by population.

Ordinarily, the Senate has 104 seats, distributed as follows: Newfoundland, 6; Maritime Provinces Division, 24 (10 each from Nova Scotia and New Brunswick and 4 from Prince Edward Island); Quebec, 24; Ontario, 24; the Western Provinces Division, 24 (6 from Manitoba, Saskatchewan, Alberta and British Columbia); and the Yukon and Northwest Territories, 1 each.

On September 27, 1990, under Section 26 of the Constitution Act, eight additional senators were appointed.

Senators are appointed in the Queen's name by the Governor General on the advice of the Prime Minister. Until 1965, senators were appointed for life; now the retirement age is 75, the same as for federal judges.

Senators are usually affiliated with a political party. As of January 1, 1991, representation in the Senate by party was: Progressive Conservatives, 54; Liberals, 50; Independents, 5; and Reform Party, 1.

The Senate performs three basic functions. In its legislative role, its major work is to revise government bills. Committees of senators with experience in law, business or administration study bills, hear witnesses and recommend amendments.

In its deliberative role, the Senate is a national forum for public issues. On two days' notice, a senator can start a debate, with no time limits, on any subject. Such debates focus attention on matters of public interest and provide an opportunity for airing regional concerns.

In its investigative role, the Senate inquires into major social and economic issues. Its standing and special committees produce reports that can lead to remedial legislation or changes in government policy.

Governors General Since Confederation

Notman/National Archives of Canada/C-10813

1867-1868
The Viscount Monck of Ballytrammon

W.J. Topley/National Archives of Canada/PA-26379

1868-1872
The Baron Lisgar of Lisgar and Bailieborough

Notman & Fraser/National Archives of Canada/PA-28628

1872-1878
The Earl of Dufferin

National Archives of Canada/C-13227

1878-1883
The Marquis of Lorne

National Archives of Canada/C-51775

1883-1888
The Marquis of Lansdowne

National Archives of Canada/C-22832

1888-1893
The Baron Stanley of Preston

W.J. Topley/National Archives of Canada/PA-25809

1893-1898
The Earl of Aberdeen

W.J. Topley/National Archives of Canada/C-1009

1898-1904
The Earl of Minto

Notman & Son/National Archives of Canada/C-33323

1904-1911
The Earl Grey

Notman & Son/National Archives of Canada/PA-29976

1911-1916
Field Marshal HRH The Duke of Connaught

Dupras & Colas/National Archives of Canada/C-1013

1916-1921
The Duke of Devonshire

John Powis/National Archives of Canada/C-1012

1921-1926
General The Baron Byng of Vimy

National Archives of Canada/PA-130833

1926-1931
The Viscount Willingdon of Ratton

Violet Keene/National Archives of Canada/C-1018

1931-1935
The Earl of Bessborough

National Film Board/National Archives of Canada/C-8507

1935-1940
The Baron Tweedsmuir of Elsfield

© 1946 Yousuf Karsh/Miller Comstock

1940-1946
Major General The Earl of Athlone

National Film Board/National Archives of Canada/PA-144173

1946-1952
Field Marshal The Viscount Alexander of Tunis

Gar Lunney/National Archives of Canada/PA-144172

1952-1959
The Right Honourable Vincent Massey

Duncan Cameron/National Archives of Canada/PA-144186

1959-1967
Major General The Right Honourable Georges P. Vanier

Duncan Cameron/National Archives of Canada/PA-144185

1967-1974
The Right Honourable Roland Michener

Duncan Cameron/National Archives of Canada/PA-144183

1974-1979
The Right Honourable Jules Léger

Cavouk Portraits

1979-1984
The Right Honourable Edward Schreyer

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1984-1990
The Right Honourable Jeanne Sauvé

R. Kolly/DND

1990-
The Right Honourable Ramon John Hnatyshyn

PRIME MINISTERS SINCE CONFEDERATION

Pittaway & Jarvis/National Archives of Canada/C-686

John Alexander Macdonald

W.J. Topley/National Archives of Canada/PA-26522

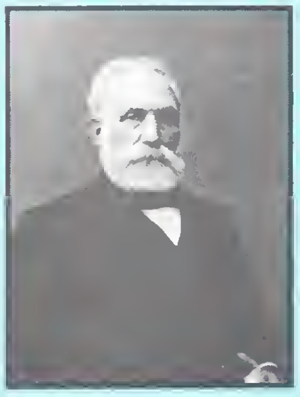
Alexander Mackenzie

W.J. Topley/National Archives of Canada/PA-33933

John Joseph Caldwell Abbott

W.J. Topley/National Archives of Canada/PA-25702

John Sparrow David Thompson


W.J. Topley/National Archives of Canada/PA-27222

Mackenzie Bowell

W.J. Topley/National Archives of Canada/PA-12203

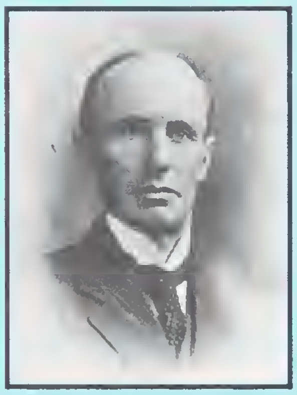
Charles Tupper

W.J. Topley/National Archives of Canada/C-1971

Wilfrid Laurier

J. Alex Hume/National Archives of Canada/C-81453

Robert Laird Borden


National Archives of Canada/C-5799

Arthur Meighen

1867-1873	***Rt. Hon. Sir John Alexander Macdonald*** *(Conservative)*
1873-1878	***Hon. Alexander Mackenzie*** *(Liberal)*
1878-1891	***Rt. Hon. Sir John Alexander Macdonald*** *(Conservative)*
1891-1892	***Hon. Sir John Joseph Caldwell Abbott*** *(Conservative)*
1892-1894	***Rt. Hon. Sir John Sparrow David Thompson*** *(Conservative)*
1894-1896	***Hon. Sir Mackenzie Bowell*** *(Conservative)*
1896	***Hon. Sir Charles Tupper*** *(Conservative)*
1896-1911	***Rt. Hon. Sir Wilfrid Laurier*** *(Liberal)*
1911-1917	***Rt. Hon. Sir Robert Laird Borden*** *(Conservative Administration)*
1917-1920	***Rt. Hon. Sir Robert Laird Borden*** *(Unionist Administration)*
1920-1921	***Rt. Hon. Arthur Meighen*** *(Unionist-Liberal and Conservative)*
1921-1926	***Rt. Hon. William Lyon Mackenzie King*** *(Liberal)*

9.4 THE LAW-MAKING PROCESS

Legislation can originate in the House of Commons or the Senate. However, bills to appropriate public revenue or to impose taxes (money bills) must originate in the House of Commons. A bill must pass both houses and receive royal assent before becoming law. Except for money bills and constitutional amendments, the Senate has the same legislative and veto power as the House of Commons. However, the House of Commons may re-adopt constitutional amendments not agreed to by the Senate after 180 days; the Senate's legislative authority in this respect is called a suspensive veto.

1926	***Rt. Hon. Arthur Meighen*** *(Conservative)*
1926-1930	***Rt. Hon. William Lyon Mackenzie King*** *(Liberal)*
1930-1935	***Rt. Hon. Richard Bedford Bennett*** *(Conservative)*
1935-1948	***Rt. Hon. William Lyon Mackenzie King*** *(Liberal)*
1948-1957	***Rt. Hon. Louis Stephen St-Laurent*** *(Liberal)*
1957-1963	***Rt. Hon. John George Diefenbaker*** *(Conservative)*
1963-1968	***Rt. Hon. Lester Bowles Pearson*** *(Liberal)*
1968-1979	***Rt. Hon. Pierre Elliott Trudeau*** *(Liberal)*
1979-1980	***Rt. Hon. Charles Joseph Clark*** *(Conservative)*
1980-1984	***Rt. Hon. Pierre Elliott Trudeau*** *(Liberal)*
1984	***Rt. Hon. John Napier Turner*** *(Liberal)*
1984-	***Rt. Hon. Martin Brian Mulroney*** *(Conservative)*

National Film Board/National Archives of Canada/C-13225

William Lyon Mackenzie King

National Archives of Canada/C-49730

Richard Bedford Bennett

National Archives of Canada/C-13254

Louis Stephen St-Laurent

Duncan Cameron/National Archives of Canada/PA-57930

John George Diefenbaker

Duncan Cameron/National Archives of Canada/PA-57932

Lester Bowles Pearson

© 1969 Yousuf Karsh/Miller Comstock

Pierre Elliott Trudeau

Courtesy of the Rt. Hon. Joe Clark

Charles Joseph Clark

Courtesy of the Rt. Hon. John N. Turner

John Napier Turner

© Yousuf Karsh

Martin Brian Mulroney

There are three types of bills: public bills introduced by the government, and public and private bills introduced by members of Parliament. All bills must be considered in principle and in detail by both houses before they are passed, but procedures vary depending on the type of bill.

Government bills The sponsoring minister first gives notice of the intention to introduce a bill. Within two days the minister moves for leave to introduce the bill and then asks that it be given first reading. This is normally granted automatically. After first reading, the bill is printed and distributed to members.

At a later sitting, the minister moves that the bill be given second reading and that it be referred to an appropriate House of Commons committee. These committees include members of the government and of the opposition parties. Because a favourable vote at this stage conveys approval of the bill in principle, there is often extensive debate culminating in a vote on the motion for second reading. If this vote is favourable, the House committee considers the bill clause-by-clause.

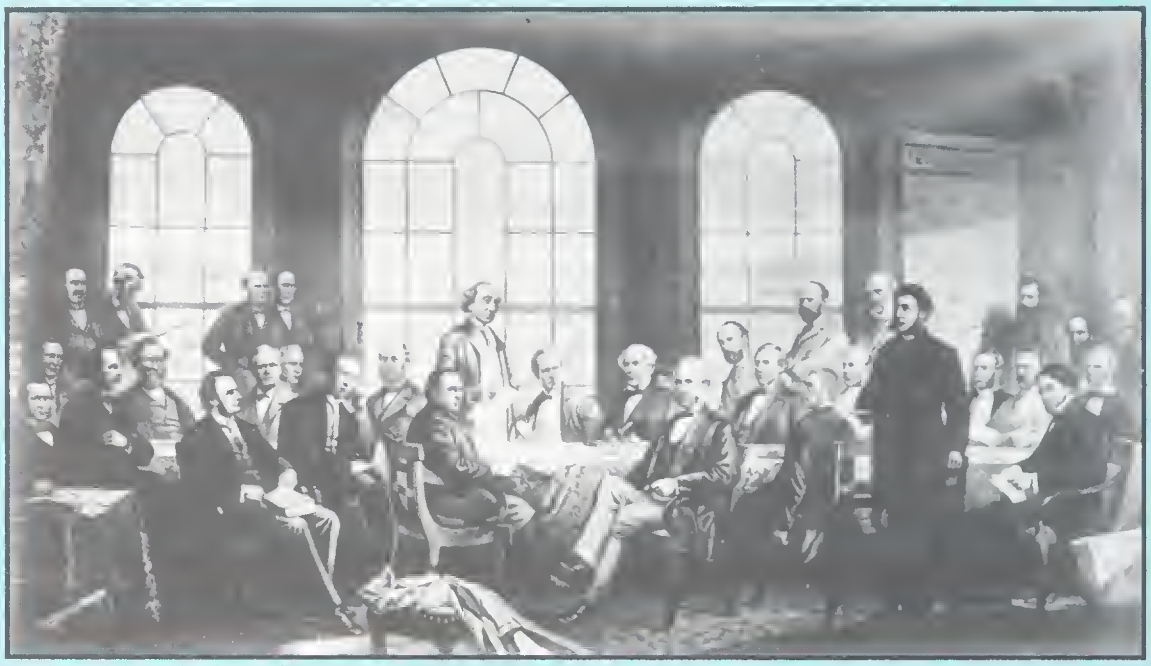
THE BIRTH OF A NATION

Canada officially came into being on July 1, 1867, bringing together three of Britain's North American colonies: New Brunswick, Nova Scotia, and the Province of Canada (present-day Ontario and Quebec). It was a day of triumph for pro-Confederationists, who had spent several years trying to convince their fellow British North Americans that joining forces would be in the best interest of all concerned.

Talk of some sort of confederation of provinces had begun several years before 1867. Nova Scotia, New Brunswick and Prince Edward Island had all bandied about the notion of a "maritime" union. Britain encouraged these discussions, and in the spring of 1864, all three maritime legislatures passed motions saying they should seriously consider it. When the Province of Canada expressed an interest in participating in the discussions with the goal of creating a broader confederation, the maritime colonies decided to host a conference on the subject in Charlottetown in September of the same year.

The Province of Canada had good reason to be interested in confederation: it hoped such a union would resolve its own political problems. In 1841, Upper Canada (Ontario) and Lower Canada (Quebec) had come together to form a single colony with two politically equal parts — Canada West and Canada East. Over the years, this new colony became more and more difficult to administer. Indeed, by 1864, internal political wrangling brought down four governments in quick succession. In Canada West a coalition of the two main political parties, one headed by George Brown, the other by John A. Macdonald, thought confederation with the maritime colonies might be the answer. They were supported by Canada East's dominant political party, the Conservatives, under George-Etienne Cartier, Hector Langevin and Alexander T. Galt.

In September 1864, the Charlottetown Conference began with a discussion of a maritime union but soon turned its full attention to outlining a more general

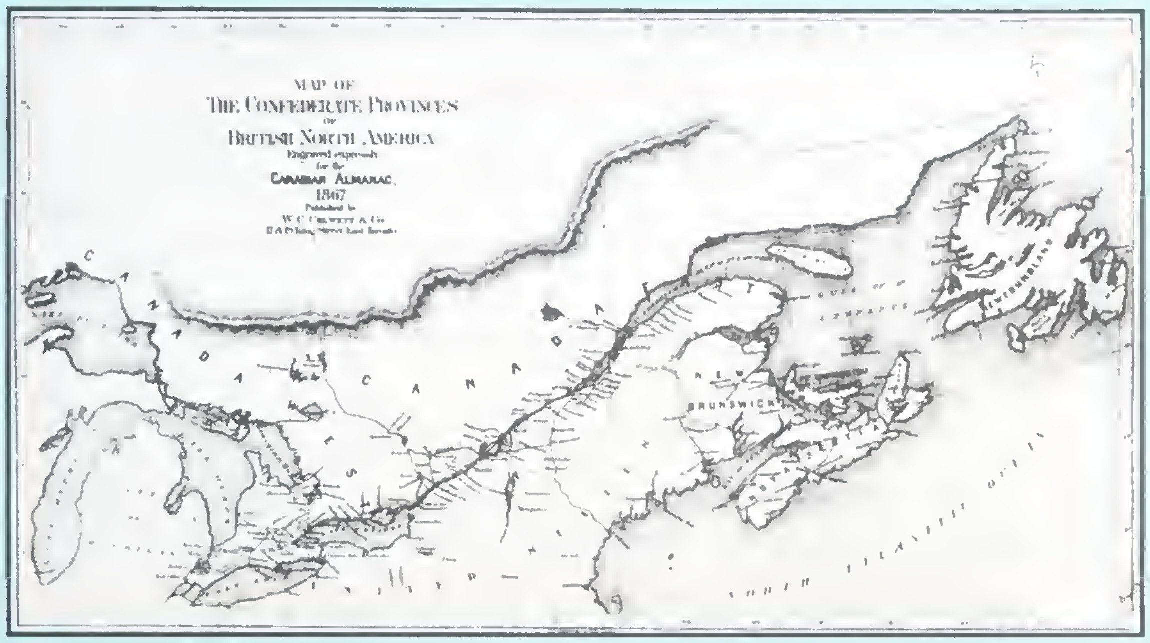


J. Micklethwaith/National Archives of Canada/RD-318

The Fathers of Confederation.

At the committee stage, expert witnesses and interested parties may be invited to give their views on the bill, and the proceedings often take many weeks. The committee submits to the House of Commons a report that may include amendments to the bill.

When the House considers the committee report, any member may, with 24 hour's notice, move an amendment on the bill. After a debate, such amendments are usually put to a vote.



National Archives of Canada/NMC-7059

Canada at Confederation.

"Canadian" confederation. The meetings progressed well and the participants, known collectively as the Fathers of Confederation, agreed to meet one month later in Quebec City to work out a comprehensive plan for confederation.

Thus in October of 1864 in Quebec City, the shape of the Dominion of Canada was carefully worked out. By the end of the conference, 72 resolutions had been agreed upon setting out, among other things, the composition of Parliament and the distribution of powers between the federal and provincial governments.

While popular support for Confederation in 1864 was lukewarm at best, a number of fortuitous circumstances made the notion appealing to the politicians of the day. The American Civil War and American foreign policies made the British North America colonies uncertain about their ability to remain independent of their giant neighbour to the south. Some politicians saw important economic benefits flowing from Confederation. And others saw it as a way to solve their internal political problems.

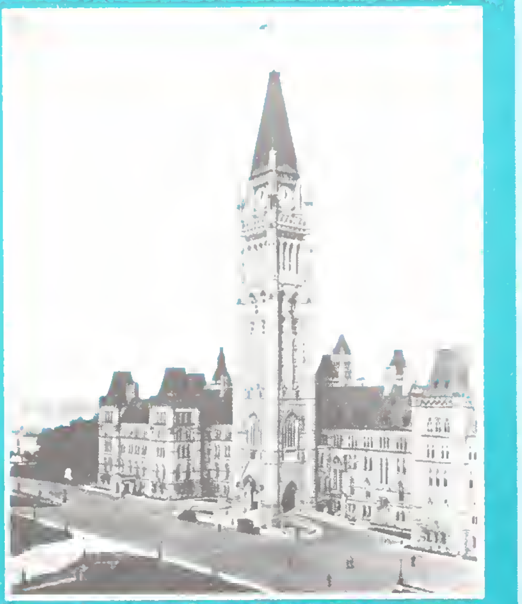
These considerations, together with strong support from the British, kept the colonies on a course toward confederation. At the London Conference, December 1866 to February 1867, the 72 resolutions penned at Quebec were translated into legislation known as the ***British North America Act****. It passed through the British Parliament, was signed by the Queen, and on July 1, 1867, was passed into law.*

Soon, other British territories in North America joined the fledgling Dominion. The Hudson's Bay Company agreed to sell almost all of its vast land holdings (present-day Manitoba, Saskatchewan, Alberta, and the Yukon and Northwest Territories) to Canada in 1870. The colony of British Columbia agreed to join Confederation in 1871, on the promise of a rail link with the rest of the country.

Although represented at the original Charlottetown Conference, and at Quebec City, Prince Edward Island did not decide to join Canada until 1873. In 1949, Newfoundland became Canada's tenth province.

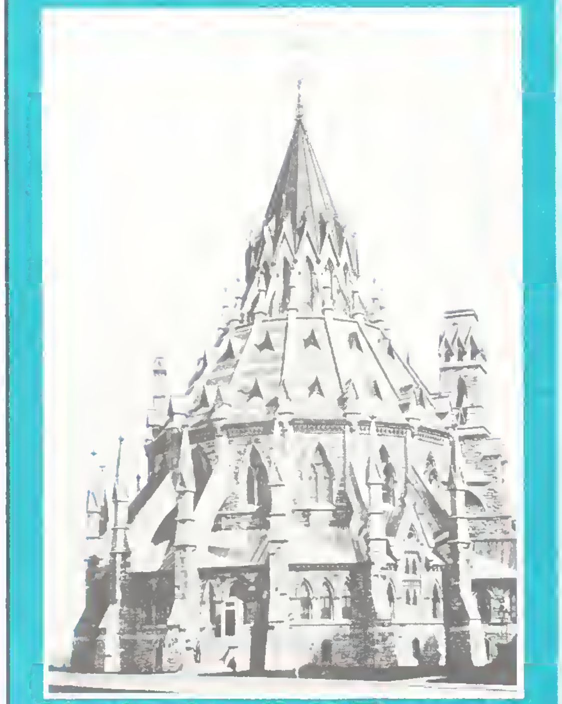
After the report stage, the minister moves that the bill be given third reading and passage. Debate on this motion is limited to whether or not the bill should be given third reading; amendments at this stage must be general. If the vote is favourable, the bill is introduced in the Senate where it goes through a similar process. After the bill has passed in both houses, it is given royal assent by the Governor General. The bill then comes into force unless an official proclamation date has been set. Money bills making changes to taxes usually take effect retroactively to the day they were introduced in the House of Commons.

PARLIAMENT



Department of the Interior/National Archives of Canada/PA-34205

Victory (Peace) Tower, Main Block, 1920s.



S. Fleming/National Archives of Canada/C-9979.

Parliament Buildings, Library, 1873-1882.

Canada's Parliament Buildings, clustered on a promontory overlooking the Ottawa River, comprise one of the largest surviving monuments of Gothic Revival architecture in the world. With their striking copper-topped roofs, turned blueish-green over time, they are at the heart of Canadian federalism and have come to symbolize Canada.

Their story begins in 1858 when Queen Victoria decided to make Ottawa the permanent seat of Canadian government. After that announcement, the British Legislative Assembly set aside a sum "not exceeding £225,000", to construct the Parliament Buildings.

A competition to choose the design for the buildings on Parliament Hill resulted in the choice of Gothic architecture, to maintain the link with Westminster in London where construction of Britain's Houses of Parliament had been completed in 1852.

In an interesting historical twist, one of the bidders for the construction of the buildings eventually became Prime Minister. Although Alexander Mackenzie had not been successful in his bidding, in 1873 he took office in the West Block, as Canada's Prime Minister, in the building he had first wanted to construct.

By 1859, workers were hard at work and during peak periods no fewer than 1,700 were on site, following the laying of the first stone by the Prince of Wales on September 1, 1860.

By 1865, civil servants and their legislative counterparts, who had been working in Quebec City, began the move to Ottawa.

Almost overnight, Ottawa, once a lumber and market town, became the political heartbeat of the Dominion of Canada, frequently visited by royalty and the workplace for parliamentarians and public servants.

By November 1867, there were 181 newly elected members in the green chamber of the Centre Block for the first parliamentary session of the Dominion. At Confederation there were 2,660 federal public servants, only 354 of whom were in Ottawa.

While Liberal leader George Brown, a founder of the Toronto newspaper ***The Globe****, had initially objected to the choice of Ottawa as the nation's capital, in a letter to Sir John A. Macdonald in the summer of 1864 he wrote: "the buildings are magnificent: the style, the extent, the site, the workmanship, are all surprisingly fine. But they are just 500 years in advance of the time... If we are to be laughed at for our folly, at least let us not be ridiculed for a half-finished pile. I go in for making it a superb folly that will bring visitors from all countries to see a work they can't see elsewhere".*

Construction of the entire group of buildings took far longer than contractors and officials had anticipated and costs far exceeded the amount initially allotted. By the end of June 1867, costs had reached more than $2.7 million. Much of this was due to the difficulty excavating the rocky site overlooking the Ottawa River, labour disputes and problems related to obtaining construction materials.

In fact, the Library opened its doors nine years after Confederation, in the autumn of 1876. Since their first construction, however, the Parliament Buildings have met with great destruction. The two most serious fires occurred in 1916 and in 1952.

Just before 9 o'clock on February 3, 1916, fire broke out in the Centre Block, in a room which held newspapers, periodicals and an extensive collection of rare volumes. The House of Commons had been in session and

9.5 PROVINCIAL AND LOCAL GOVERNMENTS

In each of the provinces, the Queen is represented by a lieutenant-governor appointed by the Governor General-in-Council. The lieutenant-governor acts on the advice of a ministry or executive council responsible to the provincial legislature.

The provincial assembly is elected for a term not exceeding five years; it may be dissolved by the lieutenant-governor on the advice of the premier of the province.

members were forced to flee from the House into the cold winter night.

Despite efforts to fireproof the buildings during construction, the entire building was engulfed by flames within an hour and 24 hours later the main Parliament Building — except for the Library and the northwest wing — was in ruins.

In 1916, reconstruction of a new Parliament Building began which in 1920 was ready for its first sitting. The cost amounted to $12.4 million. The new building resembled the original, although another storey had been added.

In 1952, in a second fire, the famous polygon-shaped Library was damaged, requiring that it too, be restored and fireproofed.

Today Parliament Hill, which includes the Centre, East and West Blocks, is surrounded by the Confederation, Wellington, Langevin, Victoria, Howard and Promenade buildings, which are all home to members of Parliament, senators and staff. Above all this stands the Peace Tower, a 92.2-metre structure featuring a 53-bell carillon, a clock and the Memorial Chamber honouring Canada's wartime dead.

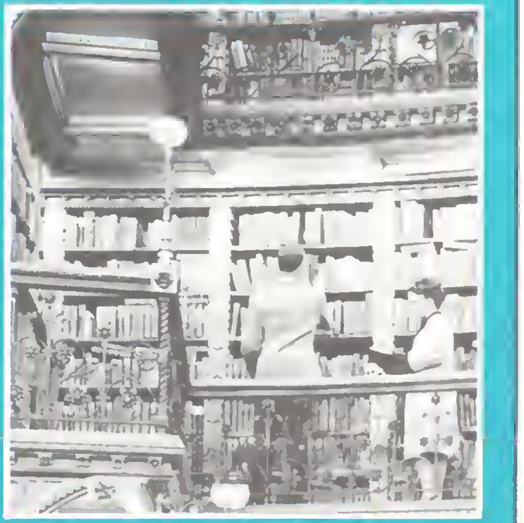
Collectively the Peace Tower, along with the distinctive Gothic-styled buildings over which it presides, have come to symbolize the spirit of Canada's political identity.

W.J. Topley/National Archives of Canada/PA 8920.

Reception on Parliament Hill, Ottawa, Ontario, circa 1885-88.

John Boyd/National Archives of Canada/RD 237

Fire on Parliament Hill, 1916.



E. Scott/National Film Board/National Archives of Canada/PA 170717

The Parliamentary Library in 1947.

The territorial governments comprise legislative assemblies and commissioners who perform duties similar to those of lieutenant-governors, but report to the Minister of Indian and Northern Affairs, who has jurisdiction over renewable and non-renewable natural resources.

Local governments in Canada include municipalities, metropolitan and regional governments and other entities created by provincial and territorial governments to provide local services. Local government services include police and fire, transportation, health and welfare, recreation, and education, which is normally administered separately from other local functions. Local governments may also supply electricity and gas.

The unit of local government is usually the municipality. The powers and responsibilities of municipalities are delegated through statutes passed by provincial and territorial legislatures.

National Archives of Canada/PA 66930

The Union of Canadian Municipalities, First Convention, Toronto, 1901.

Special agencies or joint boards and commissions are often created to provide certain services, such as public transit, for groups of municipalities. Another recent trend is for provinces to assume certain functions traditionally assigned to local government (for example, social services in New Brunswick). The provinces have also begun to establish new levels of government to provide services regionally.

9.6 NATIVE PEOPLES

Canada's native and aboriginal population includes status Indians, Inuit, Métis and non-status Indians. The Charter of Rights and Freedoms recognizes and affirms the rights of Canada's native peoples.

Indian and Northern Affairs Canada operates a wide range of programs and services for status Indians and Inuit people. The department fulfils the federal government's treaty obligations, administers the Indian Act and other relevant legislation, supports Indian and Inuit economic development and self-sufficiency, negotiates for increased autonomy for Indian communities; and negotiates for settlement of aboriginal rights claims.

Canada's total registered status Indian population is about 467,000, belonging to 598 bands. About 261,000 live on Indian reserves, 187,000 outside reserves and 19,000 on Crown-leased land. In northern and outlying regions, hunting, fishing and trapping are still important means of livelihood for many bands.

Most of the 28,000 Canadian Inuit live either in the Northwest Territories, northern Quebec or Labrador. Many Inuit still hold to traditional ways of life, but continuing development in the North, combined with a decrease in certain types of game, is leading more and more Inuit to settle in modern northern communities with schools, employment opportunities and health and transportation facilities. The federal government is easing this transition by providing services such as education, vocational training and economic development programs.

9.7 GOVERNMENT FINANCES

REVENUES AND EXPENDITURES

Total federal revenue in the 1990-91 fiscal year was $127.1 billion; total expenditures were $155.5 billion, resulting in a deficit of $28.4 billion, down from $30.4 billion in 1989-90. In 1974-75, total revenue was $30.1 billion and total expenditures were $31.5 billion, for a deficit of $1.4 billion.

The federal government's largest sources of revenue are personal income tax, general sales tax, unemployment insurance contributions and corporation income tax. In 1990-91, personal income tax generated 48% of total federal revenue, up from 39% in 1974-75. General sales tax contributed 13% of revenue, the same proportion as in 1974-75. In 1990-91, UIC contributions accounted for 10% of total revenue, up from 6% in 1974-75. This substantial change reflects increased reliance on contributions in place of general revenue to finance the program. Corporation income taxes were 9.8% of revenue, down from 17% in 1974-75.

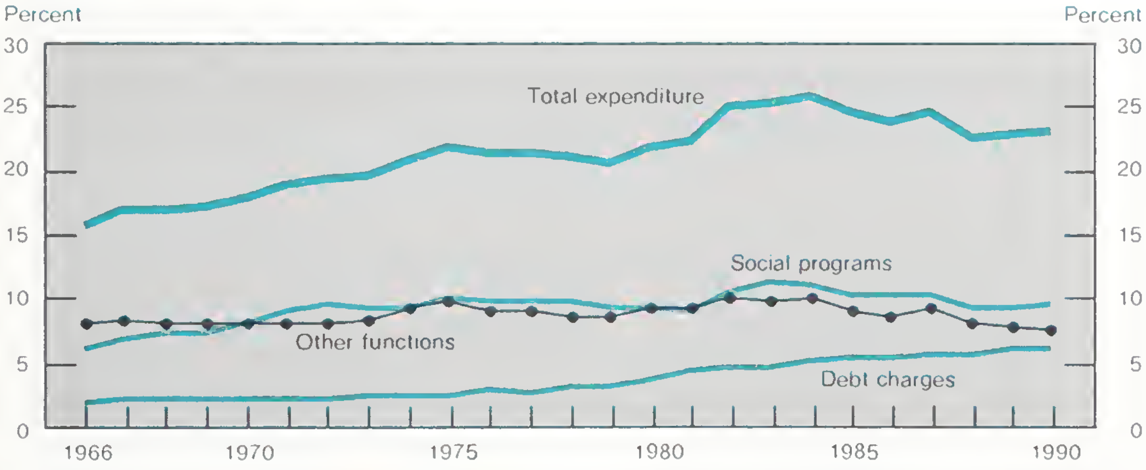
The three largest federal expenditures are for social services, debt charges and protection of persons and property. Social services expenditures were $47.7 billion or 31% of total expenditures in 1990-91, compared to $9.9 billion or 32% in 1974-75. Debt charges amounted to $41.0 billion or 27% of expenditures, up from $3.3 billion or 11% in 1974-75. Protection of persons and property — which includes national defence, courts of law, police, correctional and regulatory services — accounted for $14.8 million or 9.5% of 1990-91 expenditures, up from $2.9 billion or 9.2% in 1974-75.

Alexandra Studio/National Archives of Canada/RD-1039

Her Royal Highness, Queen Elizabeth (now the Queen Mother) on a visit to Canada in 1939.

Chart 9.1

RATIOS OF FEDERAL GOVERNMENT SPENDING TO GROSS DOMESTIC PRODUCT



FEDERAL-PROVINCIAL FISCAL RELATIONS

Fiscal relations between the federal government and the provinces and territories are dictated either by acts of Parliament or by formal agreements. These financial arrangements, many of which have existed since Confederation, include tax collection agreements and federal-provincial transfers, which are either general or for specific purposes.

General purpose transfers In the early years of Confederation, these transfers were population-based subsidies that ensured the provinces were able to meet their general responsibilities and to provide public services comparable from province to province.

Today's general purpose transfers are essentially equalization payments that reduce disparity in fiscal capacity between the "have" and "have-not" provinces. The Equalization Program was begun in 1957, and is based on a formula re-negotiated every five years. From its general revenue, the federal government compensates provinces with per capita revenue below

A. Doughty/National Archives of Canada/PA-22329

The Prince of Wales on a visit to Canada in 1919.

the "representative average standard", which is based on revenue from five representative provinces. Equalization payments are intended to ensure that all Canadians have access to comparable public services. Since the inception of the program, seven provinces have received equalization payments: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba and Saskatchewan.

Specific purpose transfers Cost sharing of specific programs by the federal and provincial governments began in 1912. Early specific purpose transfers were of fixed value and duration, and covered purposes such as agricultural training, highway construction or disease control. Today these transfers are mainly for large-scale social programs such as health care, social welfare and postsecondary education.

Tax collection agreements The first agreements were implemented for 1947 to 1952, and every five years a new set is negotiated.

The federal government collects provincial personal income taxes in all provinces except Quebec and corporation income tax in all provinces except Quebec and Ontario. This collection is made at no cost to the provinces except for a small administration fee for special tax rebates. Tax collection agreements are usually accompanied by revenue guarantees.

PROVINCIAL REVENUES AND EXPENDITURES

Total provincial and territorial revenue was $142.5 billion in 1990-91, more than five times the 1974-75 figure of $27.8 billion. Provincial and territorial expenses were $144.2 billion in 1990-91, also five times higher than the $28.1 billion spent in 1974-75.

Provincial and territorial governments rely chiefly on income taxes, general sales taxes and transfers from other levels of government as sources of revenue. In 1990-91, provincial personal income taxes raised 26.5% of total revenue, up from 20.1% in 1974-75. General sales taxes accounted for 13.4% of total revenue, compared to 12.6% in 1974-75. Specific purpose transfers from the federal government, chiefly for health and education, amounted to 10.6% of total revenues, down from 15.1% in 1974-75.

The largest provincial and territorial expenditures are for health, education and social services. In 1990-91, health accounted for 27.3% of total expenditures, compared to 25.3% in 1974-75. Education expenditures were 19.5%, down from 23.5% in 1974-75. Social service expenditures were 16.3%, up from 12.8% in 1974-75.

LOCAL GOVERNMENT REVENUES AND EXPENDITURES

A major revenue source for local government is taxation of property, businesses and amusements. Licences, permits, rents, concessions, franchises, fines and surplus funds from municipal enterprises also provide revenue, as do transfers from other levels of government, particularly from provincial governments.

Local government revenue was $52.2 billion in 1989, compared to $14.7 billion in 1975. The largest revenue source was transfers from provincial governments for education, accounting for 40% of total revenue in 1989, down from 42.8% in 1975. Property and related taxes brought in 37.9% of the total, virtually unchanged from 37.4% in 1975.

Local government expenditures totalled $53.8 billion in 1989, compared to $16 billion in 1975. By far the largest expenditure is education, accounting for 39.8% of total expenditures in 1989, down from 42.5% in 1975. Transportation and communications totalled 10.6% of total expenditures, compared to 11.9% in 1975, while environmental expenditures were 8.7%, unchanged from 1975. Protection of persons and property accounted for $4.5 billion or 8.4% of total expenditures, up from 7.5% in 1975.

9.8 FEDERAL GOVERNMENT STRUCTURE

The federal government administers legislation and government policies through departments, branches of departments, departmental corporations, corporations owned or controlled by the Government of Canada and special boards, commissions and advisory bodies. Departments and departmental corporations generally perform administrative, research, supervisory, advisory or regulatory functions, while Crown corporations often operate in a competitive or commercial environment.

CANADA'S HONOURS SYSTEM

The Canadian system of honours is based on merit, with the Order of Canada the centrepiece for civilians and the Order of Military Merit the centrepiece for armed forces members. Both Orders are fraternities of merit, and other than members' right to add letters after their names and to wear the insignias under appropriate circumstances, there are no special privileges or monetary rewards.

All Canadians are eligible to receive the Order of Canada, which came into being on the 100th anniversary of Confederation, July 1, 1967. The Order of Canada is conferred in recognition of outstanding merit and achievement of the highest degree, especially service to Canada or humanity at large. There are three levels of membership: Companion, for international service or achievement or national pre-eminence; Officer, for national service or achievement; and Member, for outstanding contributions at the local or regional level.

The badge of the Order of Canada is a stylized six-pointed snowflake bearing a crown, maple leaf and Latin motto, worn at the neck by male Companions and Officers and on the left side by male Members, while females wear all awards on the left side. The motto, ***Desiderantes meliorem patriam****, means* ***"they desire a better country."*** *Recipients may place the letters representing the category to which they are appointed — CC, OC or CM — after their names.*

There are never more than 150 living Companions, and new Companions may be appointed only when there are vacancies, limited to no more than 15 a year. Officers and Members are limited to no more than 46 and 92 appointments, respectively, in a given year, with no ceiling on the total number of Officers and Members.

The Governor General makes appointments on recommendations from the Advisory Council of the Order which considers nations sent in by members of the public. Investitures into the Order take place each spring and fall in ceremonies at the Governor General's official residences.

In 1972 the honours system was expanded to include the Order of Military Merit, recognizing long-term outstanding meritorious military service.

As in the civilian Order, there are three grades of membership: Commander, for outstanding meritorious service to Canada or the Canadian Armed Forces in duties of great responsibility; Officer, for outstanding meritorious service in duties of responsibility; and Member, for exceptional service or performance of duty.

The badge is a blue enamelled cross patée (a cross with expanding arms) with a dark blue ribbon edged in gold. The badge of Commander is worn at the neck, and those of Officers and Members are worn on the left side. Recipients are entitled to place initials corresponding to their grades — CMM, OMM or MMM — after their names.

There are no overall maximum memberships in any degree, but appointments each year may not exceed one-tenth of one per cent of the average strength of the armed forces. Of that number, 6% may be made Commanders, 30% Officers and the remainder Members. The Governor General makes appointments on recommendation by the Minister of National Defence.

In addition to the two orders, the Canadian Honours System at present includes five decorations and six medals recognizing achievement, bravery or exemplary service in a range of areas, many related to the military, civilian police, fire services, correctional services and the Canadian Coast Guard.

Companion, Order of Canada.

Officer

Member

Commander, Order of Military Merit.

Officer (gold)

Member (silver)

Each department and departmental corporation is accountable to Parliament through a Cabinet minister. Some Crown corporations are wholly owned by the Crown and are also accountable to Parliament through a minister.

Eight Crown corporations operate with special autonomy. These are the Bank of Canada, the Canada Council, the Canadian Broadcasting Corporation, Telefilm Canada, the Canadian Institute for International Peace and Security, the Canadian Wheat Board, the International Development Research Centre and the National Arts Centre Corporation.

The federal government owns share capital in various business enterprises, including Telesat Canada and Canarctic Shipping Company Limited. The government's ability to direct and influence the activities of these corporations is limited to the usual shareholder rights.

The federal government can appoint members to the board of directors of certain other entities of which it is not a shareholder — for example, Harbour Commissions, the Medical Council of Canada and the Canada Grains Council. The government's ability to direct these entities varies.

Appendix A lists federal government departments, Crown corporations, boards, commissions, offices and agencies.

FINANCIAL ADMINISTRATION

The basic principles guiding the government's financial affairs were set in the Constitution Act, 1867: no tax shall be imposed and no money spent without the authority of Parliament; and expenditures must be in accordance with the conditions authorized by Parliament.

The government introduces all money bills and exercises financial control through a budgetary system that fixes the financial needs of the government annually, making the current and prospective condition of the public treasury apparent. The government's fiscal year ends March 31.

The budget The Minister of Finance presents a budget speech near the end of the fiscal year, normally in February. In this speech, the Minister reviews the state of the national economy and the financial operations of the government in the previous fiscal year, and forecasts probable financial requirements for the coming year. At the end of the budget speech, the minister introduces bills for proposed tax changes and appropriations of revenues. Changes proposed in sales taxes or excise duties are usually effective immediately.

The budget speech supports a motion that the House give general approval to the government's budgetary policy. The debate on this may take six or more sitting days. Once the motion is passed, the way is clear to consider specific budget resolutions and tax bills.

Estimates and appropriations Treasury Board, a statutory committee of the Privy Council, reviews and assigns priorities to expenditure plans and programs submitted by government departments. The Board does this by preparing the overall Fiscal Plan that projects revenues and expenditures for up to four years, and by preparing multi-year operational plans (MYOPs) for individual programs.

The expenditure component of the Fiscal Plan consists of estimates on the cost of existing government programs, major statutory payments and public debt charges. The first-year forecast of these three items is the basis of the Main Estimates. These estimates give details by organization, program and activity.

The Fiscal Plan is published with the annual Budget, and the Main Estimates are tabled by the President of the Treasury Board before the first of March and are then referred to House committees for study. The committees must report back to the House of Commons by May 31; in the meantime the House approves an interim supply bill in effect until June 30.

The expenditure plan also includes reserves for funding new initiatives and for meeting contingencies that arise during the year. These reserves are the source of funds for the Supplementary Estimates. Access to these reserves for new policy initiatives can only be authorized by the Priorities and Planning Committee of Cabinet; Treasury Board authorizes access for emergencies, minor program enhancements or renewals. Supplementary Estimates are referred directly to House committees.

Management of public monies The Financial Administration Act outlines procedures for revenues and expenditures accounting and controlling.

All public money must be paid into the consolidated revenue fund in the name of the Receiver General for Canada, who is also the Minister of Supply and Services.

THE NATIONAL FLAG OF CANADA

On February 15, 1965 Canada's first official flag, the National Flag of Canada, was adopted by Parliament and proclaimed by Her Majesty, Queen Elizabeth II. Britain's Union Flag, commonly known as the Union Jack, had served as Canada's flag from pre-Confederation days, but the Canadian Red Ensign, with a Union Flag in the first quarter and Canada's shield in the fly, had also been in wide use.

Lester B. Pearson, Prime Minister of Canada from 1963-1968, had lobbied for the formal adoption of a national flag in 1960 when he was leader of the Opposition. He raised the issue again in 1964 after he became Prime Minister. A great controversy ensued as to what the design should be. To many Canadians, the Red Ensign was the national flag. Others were for the Union Jack which would honour the British "founding race", while others still, including Pearson himself, wanted a design denoting allegiance to Canada devoid of colonial association.

In 1964, Parliament agreed on the design for the flag we have today. The proportions of the flag are two by length and one by width. Because red and white are the sanctioned colours for Canada, the flag is red containing a white square the width of the flag in its centre and a single red maple leaf, which has enjoyed a long tradition as an emblem of Canada.

THE ARMS OF CANADA

The Arms of Canada were appointed and declared by proclamation of His Majesty King George V on November 21, 1921. Containing the Arms of England, Scotland, Ireland and Royalist France and Canada's own emblem, the Arms of Canada symbolize the country's sovereignty and acknowledge at the same time the contributions of these countries to Canada's emergence and growth as a nation. An amended version was implemented in 1957 which simplified the design and replaced the Tudor Crown with St. Edward's Crown.

The Arms can be seen on government possessions such as proclamations, passports and other official documents. They are protected by the Trade Marks Act and are thereby restricted by law to official use.

THE NATIONAL ANTHEM OF CANADA

Approved by Parliament in 1967, Canada's national anthem was officially adopted under the National Anthem Act on June 27, 1980. The words were first written in French by Judge Adolphe-Basile Routhier. A composer by the name of Calixa Lavallée wrote the music. However, it's not clear when Lavallée actually wrote it and much speculation has surrounded its mysterious emergence. Both the words and the music were completed by early May 1880, and the anthem was first performed on June 24 of that year.

The translation that was to make it popular in English Canada was written in 1908 by Robert Stanley Weir, and in 1967 the words were somewhat altered after debate in Parliament.

The words of the first verse, which is the one commonly sung as the anthem both in English and in French, are as follows:

O Canada! Our home and native land!
True patriot love in all thy sons command.
With glowing hearts we see thee rise,
The True North strong and free!
From far and wide, O Canada,
we stand on guard for thee.
God keep our land glorious and free!
O Canada, we stand on guard for thee.
O Canada, we stand on guard for thee.
Ô Canada, terre de nos aïeux,
Ton front est ceint de fleurons glorieux,
Car ton bras sait porter l'épée,
Il sait porter la croix!
Ton histoire est une épopée,
Des plus brilliants exploits.
Et ta valeur de foi trempée,
Protégera nos foyers et nos droits,
Protégera nos foyers et nos droits.

Duncan Cameron/National Archives of Canada/PA 142624

Canada gets its own flag, 1964. (The design would be modified slightly.)

Courtesy Department of the Secretary of State, Canada

"O Canada".

The fund is held on deposit with the Bank of Canada and with chartered banks and other financial institutions. If the cash balance of the fund exceeds immediate requirements, the surplus may be invested to earn interest. In recent years, a special fund has been established to assist in reducing the cumulative public debt.

Disbursements Treasury Board controls government department budgets and financial administration in general. The Board makes annual budgetary allotments after analysis of the departments' MYOP submissions for the Main Estimates.

Public debt In addition to collecting and disbursing public money, the government receives and pays out substantial sums in connection with the public debt. To cover interest payments and to redeem securities as they mature, the government issues and sells securities. The Bank of Canada acts as the government's agent in the management of public debt.

Accounts and financial statements Under the Financial Administration Act, the President of the Treasury Board and the Minister of Finance decide how the accounts of Canada and of individual departments will be kept. The Public Accounts are prepared by the Receiver General and laid before Parliament by the President of the Treasury Board each year on or before December 31, or within 15 days after Parliament resumes.

The Public Accounts are audited summary financial statements of transactions; revenue and expenditure; changes in financial position, assets and liabilities; and accumulated deficit at the fiscal year end. The Accounts also include departmental financial reports, a consolidated report on Crown corporations, a report on other corporate interests, and other information about the financial activities of the federal government. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General of Canada is independent of the government and reports directly to Parliament. The Auditor General audits government departments, agencies and some government-owned corporations. These audits assess authorization procedures, accounting policies, the accuracy of financial statements, and identify inefficiencies and mismanagement of resources.

FEDERAL GOVERNMENT EMPLOYMENT

Treasury Board manages human resources in the federal public service. It develops, applies and evaluates personnel policies, systems and methods to ensure that qualified personnel are hired at competitive wages and are deployed efficiently.

The Board has authority over employee classification and pay, conditions of employment, collective bargaining and staff relations, training and development, employee benefits, and incentives and recognition. The Board also implements employment equity, equal pay for work of equal value, and health and safety standards.

Under the Official Languages Act, Treasury Board is responsible for ensuring the public has access to federal government services in both official languages. The Board is also responsible for information management in the federal government, including access to information and privacy and security of information.

The Public Service Commission (PSC) of Canada is an independent agency accountable to Parliament. The PSC administers the Public Service Employment Act, which requires public service staffing be based on merit. The Act gives the PSC exclusive authority for making public service appointments. The Commission sets standards for selecting candidates, operates an appeals system, audits staffing actions and investigates allegations of staffing irregularities. It may also demote or discharge employees for incompetence or incapacity. The Commission deals with allegations of political activity by public servants and approves employees' requests for leave to be candidates in elections.

Some of the Commission's activities are shared with or delegated from Treasury Board. These include training programs, auditing of personnel management, investigating complaints of personal harassment, human resource planning, career counselling for management, and ensuring that underrepresented groups are given opportunities.

9.9 GOVERNMENT WORKFORCE

Together, federal, provincial, territorial and local government employed 1,208,355 persons in 1989-90, an increase of 1.5% over the previous year. Of these, 41% were provincial and territorial government employees, 31% worked for the federal government, and 28% were employed locally. These totals include government departments and agencies, boards, commissions, municipalities, conservation authorities, military personnel, RCMP uniformed personnel, and education, health and social welfare institutions. Employees of local school boards and hospitals are not included.

Government employees earned a total of $38.2 billion in 1989-90, 7% more than in the previous year. Of this total, 39% was paid to provincial and territorial employees, 36% to federal public servants and 25% to local government workers. Government employment accounted for 9.7% of all employment in Canada in 1989-90 and 11.7% of all salaries and wages paid.

Thirty-six percent of all government employees worked in Ontario, which accounted for 40% of federal employees, 26% of provincial employees and 47% of local government employees.

Total government employment grew by 32% or 295,000 employees from 1974-75 to 1989-90, with provincial/territorial and local government employment both increasing 38% while the federal government grew 8%. In the past five years, local government has been the fastest-growing sector, with an 11% increase compared to 5% for the provincial/territorial governments and a 0.4% decrease for the federal government.

Federal and provincial government business enterprises accounted for a further 332,227 employees in 1989-90, 2.7% of employment in Canada. Of this 2.7%, slightly more than half were employed by federal government businesses. Government business enterprise employees earned $11.8 billion in 1989-90, 3.6% of total salaries and wages in Canada.

Sources

Auditor General of Canada.
Elections Canada.
House of Commons.
Privy Council.
Provincial and Territorial Governments.
Public Service Commission.
The Senate.
Treasury Board.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Federal Government Enterprise Finance, Income and Expenditure, Assets, Liabilities and Net Worth*, annual. 61-203
- *Provincial Government Enterprise Finance*, annual. 61-204
- *Local Government Finance, Revenue and Expenditure, Assets and Liabilities*, annual. 68-204
- *Provincial Government Finance, Assets, Liabilities, Source and Application of Funds*, annual. 68-209
- *Federal Government Finance, Revenue, Expenditure, Assets and Liabilities*, annual. 68-211
- *The System of Government Financial Management Statistics*, 1984. 68-507
- *Federal Government Employment*, quarterly. 72-004
- *Provincial and Territorial Government Employment*, quarterly. 72-007
- *Local Government Employment*, quarterly. 72-009
- *Federal Government Employment in Metropolitan Areas*, annual. 72-205
- *Directory of Federal Government Scientific and Technological Establishments*, annual. 88-206

TABLES

LEGEND

. .	*not available*	e	*estimate*
. . .	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

9.1 REPRESENTATION IN THE HOUSE OF COMMONS, AS AT FEDERAL GENERAL ELECTIONS, 1867-1988

Province or territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968 1972 1974	1979 1980 1984	1988
Ontario	82	88	88	92	92	92	86	86	82	82	82	83	85	88	95	99
Quebec	65	65	65	65	65	65	65	65	65	65	65	73	75	74	75	75
Nova Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12	11	11	11
New Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10	10	10	10
Manitoba		4	4	5	5	7	10	10	15	17	17	16	14	13	14	14
British Columbia		6	6	6	6	6	7	7	13	14	16	18	22	23	28	32
Prince Edward Island	. . .	. . .	6	6	6	5	4	4	4	4	4	4	4	4	4	4
Saskatchewan	. . .			. . .	4	4	10	10	16	21	21	20	17	13	14	14
Alberta								7	12	16	17	17	17	19	21	26
Yukon													1	1	1	1
Mackenzie River		. . .	. . .	. . .	. . .	. . .	1	1	1	1	1	1				
NWT[1]													1	1	2	2
Newfoundland	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	7	7	7	7	7
Total	181	200	206	211	215	213	214	221	235	245	245	262	265	264	282	295

[1] *Electoral district of Northwest Territories in 1963, 1965, 1968, 1972 and 1974. Northwest Territories has been divided into two electoral districts since 1976.*

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation[1]
NEWFOUNDLAND (7 members)					
Bonavista-Trinity-Conception	89,559	41,881	21,290	Fred Mifflin	Lib.
Burin-St. George's	84,325	38,736	18,527	Roger Simmons	Lib.
Gander-Grand Falls	85,946	36,650	20,314	George Baker	Lib.
Humber-St. Barbe-Baie Verte	82,592	39,445	26,259	Brian Tobin	Lib.
Labrador	31,318	13,398	7,126	Bill Rompkey	Lib.
St. John's East	104,416	49,095	21,503	Ross Reid	PC
St. John's West	89,525	39,650	24,194	John Crosbie	PC
PRINCE EDWARD ISLAND (4 members)					
Cardigan	29,049	18,276	9,325	Lawrence MacAulay	Lib.
Egmont	33,736	19,232	10,158	Joe McGuire	Lib.
Hillsborough	30,473	20,599	8,897	George Proud	Lib.
Malpeque	29,248	18,221	9,381	Catherine Callbeck	Lib.
NOVA SCOTIA (11 members)					
Annapolis Valley-Hants	82,860	47,315	20,763	Pat Nowlan	PC
Cape Breton-East Richmond	64,485	34,653	22,786	David Dingwall	Lib.
Cape Breton Highlands-Canso	66,214	40,183	20,318	Francis LeBlanc	Lib.
Cape Breton-The Sydneys	70,249	38,085	23,931	Russell MacLellan	Lib.
Central Nova	71,222	39,523	19,065	Elmer MacKay	PC
Cumberland-Colchester	78,455	44,398	20,384	Bill Casey	PC

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988 (continued)

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation[1]
NOVA SCOTIA (concluded)					
Dartmouth	87,118	48,015	21,958	Ron MacDonald	Lib.
Halifax	92,787	52,884	22,470	Mary Clancy	Lib.
Halifax West	87,351	55,736	24,815	Howard Crosby	PC
South Shore	76,200	40,281	18,547	Peter McCreath	PC
South West Nova	70,501	42,450	21,062	Coline Campbell	Lib.
NEW BRUNSWICK (10 members)					
Beauséjour	65,473	39,318	22,650	Fernand Robichaud	Lib.
Carleton-Charlotte	64,060	34,225	16,026	Greg Thompson	PC
Fredericton	80,731	48,001	20,494	J.W. Bird	PC
Fundy-Royal	77,353	45,701	21,129	Bob Corbett	PC
Gloucester	71,760	39,815	20,251	Douglas Young	Lib.
Madawaska-Victoria	57,247	31,229	14,747	Bernard Valcourt	PC
Miramichi	57,165	28,076	14,073	Maurice Dionne	Lib.
Moncton	85,649	51,257	23,823	George Rideout	Lib.
Restigouche	54,989	31,610	15,252	Guy Arseneault	Lib.
Saint John	81,976	39,599	16,798	G.S. Merrithew	PC
QUEBEC (75 members)					
Abitibi	86,312	40,292	22,254	Guy St-Julien	PC
Argenteuil-Papineau	72,039	42,157	23,076	Lise Bourgault	PC
Beauce	93,233	53,855	36,212	Gilles Bernier	PC
Beauharnois-Salaberry	87,675	51,345	29,149	Jean-Guy Hudon	PC
Bellechasse	85,382	43,361	27,621	Pierre Blais	PC
Berthier-Montcalm	89,706	54,341	29,370	Robert de Cotret	PC
Blainville-Deux-Montagnes	106,877	68,476	40,810	Monique Landry	PC
Bonaventure-îles-de-la-Madeleine	52,046	26,897	15,491	Darryl Gray	PC
Brome-Missisquoi	75,671	43,112	22,540	Gabrielle Bertrand	PC
Chambly	88,686	56,186	25,770	Richard Grisé	PC
Champlain	83,963	48,125	29,788	Michel Champagne	PC
Charlesbourg	105,401	61,728	35,549	Monique Tardif	PC
Charlevoix	82,964	42,911	33,730	Brian Mulroney[2]	PC
Châteauguay	87,985	52,023	22,439	Ricardo Lopez	PC
Chicoutimi	85,667	45,102	30,699	André Harvey	PC
Drummond	77,492	46,119	23,703	Jean-Guy Guilbault	PC
Frontenac	66,677	35,782	25,872	Marcel Masse	PC
Gaspé	62,986	28,998	16,298	Charles-Eugène Marin	PC
Gatineau-La Lièvre	100,582	55,136	23,507	Mark Assad	Lib.
Hull-Aylmer	82,920	47,397	23,218	Gilles Rocheleau	Lib.
Joliette	90,378	53,789	27,908	Gaby Larrivée	PC
Jonquière	68,610	34,854	21,523	Jean-Pierre Blackburn	PC
Kamouraska-Rivière-du-Loup	73,747	35,825	20,388	André Plourde	PC
Lac-Saint-Jean	69,229	35,720	23,112	Lucien Bouchard	PC
Langelier	95,226	55,176	24,555	Gilles Loiselle	PC
La Prairie	91,918	59,773	30,834	Fernand Jourdenais	PC
Laurentides	97,227	58,276	31,000	Jacques Vien	PC
Lévis	95,128	60,723	33,673	Gabriel Fontaine	PC
Longueuil	105,756	57,001	29,054	Nic Leblanc	PC
Lotbinière	90,381	52,124	26,585	Maurice Tremblay	PC
Louis-Hébert	90,206	64,038	37,329	Suzanne Duplessis	PC
Manicouagan	69,488	28,480	17,126	Charles Langlois	PC
Matapédia-Matane	66,324	32,783	15,962	Jean-Luc Joncas	PC
Mégantic-Compton-Stanstead	74,483	39,561	23,246	François Gérin	PC
Montmorency-Orléans	89,540	52,338	30,578	Charles DeBlois	PC
Pontiac-Gatineau-Labelle	77,291	39,208	20,522	Barry Moore	PC
Portneuf	72,532	43,065	23,893	Marc Ferland	PC
Québec-Est	93,853	54,857	29,493	Marcel Tremblay	PC
Richelieu	82,088	48,328	32,104	Louis Plamondon	PC
Richmond-Wolfe	78,226	42,028	19,451	Yvon Côté	PC
Rimouski-Témiscouata	73,747	39,121	23,789	Monique Vézina	PC
Roberval	76,020	35,641	26,717	Benoît Bouchard	PC
Saint-Hubert	103,801	54,415	25,573	Pierrette Venne	PC
Saint-Hyacinthe-Bagot	83,531	50,116	25,267	Andrée Champagne	PC

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988 (continued)

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affili-ation[1]
QUEBEC (concluded)					
Saint-Jean	80,023	51,342	27,685	Clément Couture	PC
Saint-Maurice	74,880	43,870	18,741	Denis Pronovost	PC
Shefford	82,425	51,874	23,943	Jean Lapierre	Lib.
Sherbrooke	88,273	56,100	34,538	Jean Charest	PC
Témiscamingue	81,448	42,164	19,106	Gabriel Desjardins	PC
Terrebonne	103,892	70,308	35,345	Jean-Marc Robitaille	PC
Trois-Rivières	73,549	44,602	29,370	Pierre Vincent	PC
Verchères	76,990	50,715	32,317	Marcel Danis	PC
Island of Montreal and île-Jésus					
Ahuntsic	89,383	52,928	21,748	Nicole Roy-Arcelin	PC
Anjou-Rivière-des-Prairies	83,760	55,935	27,451	Jean Corbeil	PC
Bourassa	94,914	45,682	18,979	Marie Gibeau	PC
Duvernay	89,426	58,180	33,426	Vincent Della Noce	PC
Hochelaga-Maisonneuve	85,325	43,296	16,246	Allan Koury	PC
Lachine-Lac-Saint-Louis	99,442	58,304	25,870	Bob Layton	PC
LaSalle-Émard	96,622	53,489	23,394	Paul Martin	Lib.
Laurier-Sainte-Marie	86,861	42,298	15,956	Jean-Claude Malépart	Lib.
Laval	88,915	57,353	26,858	Guy Ricard	PC
Laval-des-Rapides	89,994	55,217	27,955	Jacques Tétreault	PC
Mercier	101,685	59,077	30,804	Carole Jacques	PC
Mount Royal	91,479	46,305	27,354	Sheila Finestone	Lib.
Notre-Dame-de-Grâce	81,491	42,714	22,928	Warren Allmand	Lib.
Outremont	96,707	46,972	17,597	J.-Pierre Hogue	PC
Papineau-Saint-Michel	94,080	41,214	18,122	André Ouellet	Lib.
Pierrefonds-Dollard	93,753	56,201	27,532	Gerry Weiner	PC
Rosemont	99,383	47,311	17,127	Benoît Tremblay	PC
Saint-Denis	92,722	43,846	19,928	Marcel Prud'homme	Lib.
Saint-Henri-Westmount	82,924	40,937	16,600	David Berger	Lib.
Saint-Laurent	86,686	45,400	20,418	Shirley Maheu	Lib.
Saint-Léonard	95,104	47,832	23,014	Alfonso Gagliano	Lib.
Vaudreuil	84,824	55,806	30,392	Pierre Cadieux	PC
Verdun-Saint-Paul	88,449	46,596	20,113	Gilbert Chartrand	PC
ONTARIO (99 members)					
Algoma	68,322	31,814	16,766	Maurice Foster	Lib.
Brampton	88,220	57,719	29,473	John McDermid	PC
Brampton-Malton	94,268	40,252	16,427	Harry Chadwick	PC
Brant	92,271	47,925	19,633	Derek Blackburn	NDP
Bruce-Grey	89,721	48,705	19,748	Gus Mitges	PC
Burlington	94,050	50,862	26,293	Bill Kempling	PC
Cambridge	96,827	51,345	20,578	Pat Sobeski	PC
Carleton-Gloucester	79,706	64,641	30,925	Eugène Bellemare	Lib.
Cochrane-Superior	65,927	30,027	11,954	Réginald Bélair	Lib.
Durham	87,393	52,209	24,065	Ross Stevenson	PC
Elgin	80,885	40,911	15,694	Ken Monteith	PC
Erie	76,653	39,570	15,063	Girve Fretz	PC
Essex-Kent	76,266	38,132	18,634	Jerry Pickard	Lib.
Essex-Windsor	86,213	43,235	18,926	Steven Langdon	NDP
Glengarry-Prescott-Russell	80,903	50,604	35,280	Don Boudria	Lib.
Guelph-Wellington	93,120	60,025	25,721	Bill Winegard	PC
Haldimand-Norfolk	94,910	44,872	16,921	Bob Speller	Lib.
Halton-Peel	88,407	52,661	28,521	Garth Turner	PC
Hamilton East	85,807	38,029	18,632	Sheila Copps	Lib.
Hamilton Mountain	92,566	52,029	16,934	Beth Phinney	Lib.
Hamilton-Wentworth	87,580	57,365	23,876	Geoff Scott	PC
Hamilton West	88,873	44,558	16,598	Stan Keyes	Lib.
Hastings-Frontenac-Lennox and Addington	78,943	43,471	17,247	Bill Vankoughnet	PC
Huron-Bruce	89,574	47,318	20,042	Murray Cardiff	PC
Kenora-Rainy River	74,612	35,026	13,313	Robert Nault	Lib.
Kent	80,936	39,852	15,835	Rex Crawford	Lib.
Kingston and the Islands	89,121	57,457	23,121	Peter Milliken	Lib.
Kitchener	98,956	54,122	22,400	John Reimer	PC
Lambton-Middlesex	76,223	42,051	17,312	Ralph Ferguson	Lib.
Lanark-Carleton	84,892	57,430	27,379	Paul Dick	PC

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988 (continued)

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation[1]
ONTARIO (continued)					
Leeds-Grenville	80,941	46,838	20,141	Jim Jordan	Lib.
Lincoln	86,612	52,410	19,955	Shirley Martin	PC
London East	93,862	52,368	19,547	Joe Fontana	Lib.
London-Middlesex	89,632	48,672	18,534	Terry Clifford	PC
London West	96,542	62,757	28,392	Tom Hockin	PC
Markham	90,594	69,592	36,673	Bill Attewell	PC
Mississauga East	94,564	51,084	23,055	Albina Guarnieri	Lib.
Mississauga South	94,907	47,623	24,482	Don Blenkarn	PC
Mississauga West	92,127	69,148	32,992	Bob Horner	PC
Nepean	84,361	56,980	26,632	Beryl Gaffney	Lib.
Niagara Falls	83,146	44,040	17,077	Rob Nicholson	PC
Nickel Belt	78,971	39,238	17,418	John Rodriguez	NDP
Nipissing	72,431	37,989	15,488	Bob Wood	Lib.
Northumberland	80,079	45,719	18,600	Christine Stewart	Lib.
Oakville-Milton	98,071	65,395	35,033	Otto Jelinek	PC
Ontario	95,724	72,031	34,969	René Soetens	PC
Oshawa	91,263	42,022	18,410	Ed Broadbent[2]	NDP
Ottawa Centre	83,254	50,294	18,096	Mac Harb	Lib.
Ottawa South	86,059	55,028	27,740	John Manley	Lib.
Ottawa-Vanier	87,527	48,821	28,581	Jean-Robert Gauthier	Lib.
Ottawa West	79,570	47,941	23,470	Marlene Catterall	Lib.
Oxford	91,444	49,270	19,367	Bruce Halliday	PC
Parry Sound-Muskoka	71,898	40,217	17,232	Stan Darling	PC
Perth-Wellington-Waterloo	90,712	46,270	17,974	Harry Brightwell	PC
Peterborough	93,343	55,455	22,492	Bill Domm	PC
Prince Edward-Hastings	87,215	45,803	19,559	Lyle Vanclief	Lib.
Renfrew	88,915	47,322	25,558	Len Hopkins	Lib.
St. Catharines	92,990	48,625	19,623	Ken Atkinson	PC
Sarnia-Lambton	83,951	43,173	19,304	Ken James	PC
Sault Ste Marie	78,077	41,757	14,595	Steve Butland	NDP
Simcoe Centre	90,798	52,148	23,504	Edna Anderson	PC
Simcoe North	86,913	50,217	21,847	Doug Lewis	PC
Stormont-Dundas	80,157	43,331	19,698	Bob Kilger	Lib.
Sudbury	81,672	43,007	17,879	Diane Marleau	Lib.
Thunder Bay-Atikokan	68,110	36,907	13,132	Iain Angus	NDP
Thunder Bay-Nipigon	70,292	38,435	15,346	Joe Comuzzi	Lib.
Timiskaming	60,523	30,986	11,230	John MacDougall	PC
Timmings-Chapleau	65,680	31,995	11,622	Cid Samson	NDP
Victoria-Haliburton	77,583	47,950	22,270	Bill Scott	PC
Waterloo	92,018	60,227	26,949	Walter McLean	PC
Welland-St. Catharines-Thorold	85,506	47,730	17,878	Gilbert Parent	Lib.
Wellington-Grey-Dufferin-Simcoe	91,679	51,508	26,066	Perrin Beatty	PC
Windsor-Lake St. Clair	85,759	43,956	18,915	Howard McCurdy	NDP
Windsor West	91,743	43,045	23,796	Herb Gray	Lib.
York North	93,734	89,029	37,513	Maurizio Bevilacqua	Lib.
York-Simcoe	94,618	57,221	26,732	John Cole	PC
Metropolitan Toronto					
Beaches-Woodbine	94,441	45,337	15,760	Neil Young	NDP
Broadview-Greenwood	92,314	41,285	15,808	Dennis Mills	Lib.
Davenport	95,861	28,764	16,436	Charles Caccia	Lib.
Don Valley East	91,994	42,396	18,719	Alan Redway	PC
Don Valley North	89,869	40,848	17,551	Barbara Greene	PC
Don Valley West	94,347	52,478	27,683	John Bosley	PC
Eglinton-Lawrence	97,365	41,208	20,446	Joseph Volpe	Lib.
Etobicoke Centre	91,152	51,002	24,338	Michael Wilson	PC
Etobicoke-Lakeshore	95,514	46,732	20,405	Patrick Boyer	PC
Etobicoke North	96,309	50,503	22,618	Roy MacLaren	Lib.
Parkdale-High Park	92,005	45,874	19,614	Jesse Flis	Lib.
Rosedale	94,399	55,565	22,704	David MacDonald	PC
St. Paul's	96,624	53,543	25,206	Barbara McDougall	PC
Scarborough-Agincourt	87,987	44,446	19,459	Jim Karygiannis	Lib.
Scarborough Centre	90,905	43,107	17,247	Pauline Browes	PC
Scarborough East	87,875	42,375	18,149	Bob Hicks	PC
Scarborough-Rouge River	86,058	49,054	22,767	Derek Lee	Lib.
Scarborough West	90,528	42,197	15,363	Tom Wappel	Lib.

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988 (continued)

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation[1]
ONTARIO (concluded)					
Trinity-Spadina	94,291	41,107	15,565	Dan Heap	NDP
Willowdale	94,415	52,083	24,230	Jim Peterson	Lib.
York Centre	92,558	42,325	24,962	Bob Kaplan	Lib.
York South-Weston	93,747	40,078	21,111	John Nunziata	Lib.
York West	96,837	34,300	19,936	Sergio Marchi	Lib.
MANITOBA (14 members)					
Brandon-Souris	71,610	37,329	17,372	Lee Clark	PC
Churchill	65,254	25,336	14,168	Rod Murphy	NDP
Dauphin-Swan River	70,917	35,793	14,719	Brian White	PC
Lisgar-Marquette	68,135	32,560	17,484	Charlie Mayer	PC
Portage-Interlake	69,186	34,513	13,307	Felix Holtmann	PC
Provencher	70,097	34,426	19,000	Jake Epp	PC
St. Boniface	74,095	47,079	24,117	Ronald Duhamel	Lib.
Selkirk	73,743	46,945	17,813	David Bjornson	PC
Winnipeg North	77,543	43,096	16,375	Rey Pagtakhan	Lib.
Winnipeg North Centre	79,823	29,904	12,104	David Walker	Lib.
Winnipeg St. James	76,031	41,863	18,695	John Harvard	Lib.
Winnipeg South	73,433	50,038	22,865	Dorothy Dobbie	PC
Winnipeg South Centre	77,977	45,214	26,191	Lloyd Axworthy	Lib.
Winnipeg Transcona	78,397	42,475	17,361	Bill Blaikie	NDP
SASKATCHEWAN (14 members)					
Kindersley-Lloydminster	66,631	33,673	15,089	Bill McKnight	PC
Mackenzie	67,396	34,423	15,931	Vic Althouse	NDP
Moose Jaw-Lake Centre	69,225	37,905	15,916	Rod Laporte	NDP
Prince Albert-Churchill River	69,352	31,953	17,915	Ray Funk	NDP
Regina-Lumsden	69,230	37,688	21,593	Les Benjamin	NDP
Regina-Qu'Appelle	67,060	34,678	18,608	Simon de Jong	NDP
Regina-Wascana	70,527	45,357	15,339	Larry Schneider	PC
Saskatoon-Clark's Crossing	69,109	41,666	19,889	Chris Axworthy	NDP
Saskatoon-Dundurn	70,796	43,993	20,986	Ron Fisher	NDP
Saskatoon-Humboldt	67,391	41,204	17,703	Stan Hovdebo	NDP
Souris-Moose Mountain	70,760	36,981	17,200	Len Gustafson	PC
Swift Current-Maple Creek-Assiniboia	70,264	36,347	15,944	Geoff Wilson	PC
The Battlefords-Meadow Lake	71,775	34,332	14,516	Len Taylor	NDP
Yorkton-Melville	68,797	36,485	18,523	Lorne Nystrom	NDP
ALBERTA (26 members)					
Athabasca	72,501	32,792	17,248	Jack Shields	PC
Beaver River	68,200	31,243	13,768	John Dahmer[4]	PC
Calgary Centre	104,787	54,102	28,794	Harvie Andre	PC
Calgary North	99,258	61,284	35,212	Al Johnson	PC
Calgary Northeast	93,075	47,587	25,890	Alex Kindy	PC
Calgary Southeast	102,838	52,069	32,477	Lee Richardson	PC
Calgary Southwest	94,531	62,199	40,397	Barbara Sparrow	PC
Calgary West	98,319	54,963	32,025	Jim Hawkes	PC
Crowfoot	70,059	35,694	19,079	Arnold Malone	PC
Edmonton East	94,084	39,714	15,051	Ross Harvey	NDP
Edmonton North	95,689	47,942	19,045	Steve Paproski	PC
Edmonton Northwest	83,230	39,109	15,556	Murray Dorin	PC
Edmonton Southeast	87,348	48,676	23,597	David Kilgour	PC
Edmonton Southwest	89,417	54,230	28,931	Jim Edwards	PC
Edmonton-Strathcona	92,224	54,289	18,088	Scott Thorkelson	PC
Elk Island	75,314	40,442	19,447	Brian O'Kurley	PC
Lethbridge	91,025	46,024	26,750	Blaine Thacker	PC
Macleod	66,014	33,770	16,989	Ken Hughes	PC
Medicine Hat	88,048	42,829	25,114	Bob Porter	PC
Peace River	99,542	43,231	23,363	Albert Cooper	PC
Red Deer	86,971	45,597	24,187	Doug Fee	PC

9.2 ELECTORAL DISTRICTS, VOTES POLLED AND NAMES OF MEMBERS OF THE HOUSE OF COMMONS AS ELECTED AT THE THIRTY-FOURTH GENERAL ELECTION, NOVEMBER 21, 1988 (concluded)

Province and electoral district	Population, Census 1986	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation[1]
ALBERTA (concluded)					
St. Albert	75,603	42,805	19,945	Walter Van De Walle	PC
Vegreville	73,542	37,772	24,561	Don Mazankowski	PC
Wetaskiwin	79,128	40,147	20,090	Willie Littlechild	PC
Wild Rose	74,567	41,769	20,054	Louise Feltham	PC
Yellowhead	82,410	40,307	17,847	Joe Clark	PC
BRITISH COLUMBIA (32 members)					
Burnaby-Kingsway	99,949	58,764	25,150	Svend Robinson	NDP
Capilano-Howe Sound	72,773	43,587	20,219	Mary Collins	PC
Cariboo-Chilcotin	71,682	31,573	11,525	Dave Worthy	PC
Comox-Alberni	87,182	49,631	21,128	Robert Skelly	NDP
Delta	77,420	44,848	19,755	Stan Wilbee	PC
Esquimalt-Juan de Fuca	75,813	44,655	22,644	David Barrett	NDP
Fraser Valley East	77,252	43,135	16,631	Ross Belsher	PC
Fraser Valley West	78,480	51,694	23,565	Robert Wenman	PC
Kamloops	84,149	41,477	21,513	Nelson Riis	NDP
Kootenay East	71,412	34,703	14,904	Sid Parker	NDP
Kootenay West-Revelstoke	73,567	35,411	16,381	Lyle Kristiansen	NDP
Mission-Coquitlam	82,708	51,103	22,259	Joy Langan	NDP
Nanaimo-Cowichan	99,107	55,631	27,177	David Stupich	NDP
New Westminster-Burnaby	99,749	57,577	24,933	Dawn Black	NDP
North Island-Powell River	85,936	42,839	22,179	Raymond Skelly	NDP
North Vancouver	80,755	49,510	18,515	Chuck Cook	PC
Okanagan Centre	85,237	52,664	19,485	Al Horning	PC
Okanagan-Shuswap	78,211	43,414	18,749	Lyle MacWilliam	NDP
Okanagan-Similkameen-Merritt	77,244	43,465	16,694	Jack Whittaker	NDP
Port Moody-Coquitlam	83,959	54,383	23,871	Ian Waddell	NDP
Prince George-Bulkley Valley	87,992	37,505	14,248	Brian Gardiner	NDP
Prince George-Peace River	85,626	35,371	13,903	Frank Oberle	PC
Richmond	96,154	58,515	25,559	Tom Siddon	PC
Saanich-Gulf Islands	92,551	65,807	23,168	Lynn Hunter	NDP
Skeena	77,697	32,108	16,815	Jim Fulton	NDP
Surrey North	90,110	54,281	19,940	Jim Karpoff	NDP
Surrey-White Rock	84,469	60,866	26,320	Benno Friesen	PC
Vancouver Centre	99,262	64,041	23,620	Kim Campbell	PC
Vancouver East	96,841	40,054	20,108	Margaret Mitchell	NDP
Vancouver Quadra	99,677	55,360	24,021	John Turner[2]	Lib.
Vancouver South	98,789	50,891	21,222	John Fraser[3]	PC
Victoria	92,714	59,367	22,399	John Brewin	NDP
YUKON (1 member)					
Yukon	23,153	12,875	6,594	Audrey McLaughlin	NDP
NORTHWEST TERRITORIES (2 members)					
Nunatsiaq	16,973	8,535	3,356	Jack Anawak	Lib.
Western Arctic	28,768	12,915	5,415	Ethel Blondin	Lib.

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[1] *Party standings as a result of the general election, Nov. 21, 1988: Progressive Conservative 169, Liberal 83, New Democratic 43.*

[2] *Leader of a political party.*

[3] *Speaker of the House of Commons, as elected by the House of Commons on Dec. 12, 1988.*

[4] *Following the death of John Dahmer on Nov. 26, 1988, a byelection was held. Deborah C. Grey (Reform Party) filled the vacancy.*

9.3 VOTERS ON THE LISTS AND VOTES POLLED AT THE FEDERAL GENERAL ELECTIONS OF 1979, 1980, 1984 AND 1988

Province or territory	1979	1980	1984	1988
	Voters on the lists			
Newfoundland	338,730	346,281	370,219	384,236
Prince Edward Island	80,332	83,976	87,215	89,546
Nova Scotia	567,648	592,992	613,964	644,353
New Brunswick	456,707	473,972	491,169	508,741
Quebec	4,281,669	4,395,389	4,575,493	4,740,091
Ontario	5,328,123	5,597,683	5,882,320	6,309,375
Manitoba	670,098	687,702	704,585	729,281
Saskatchewan	619,144	639,649	673,289	675,160
Alberta	1,249,688	1,315,770	1,479,675	1,557,669
British Columbia	1,604,890	1,718,562	1,853,110	1,954,040
Yukon[1]	13,785	14,046	15,056	16,396
Northwest Territories	24,183	24,394	28,916	30,113
Total	15,234,997	15,890,416	16,775,011	17,639,001
	Votes polled			
Newfoundland	205,080	206,130	242,491	258,855
Prince Edward Island	65,964	67,507	73,801	76,328
Nova Scotia	434,625	431,061	462,885	483,523
New Brunswick	342,919	341,212	379,850	388,831
Quebec	3,270,827	3,018,501	3,485,815	3,624,451
Ontario	4,191,809	4,054,194	4,461,416	4,732,398
Manitoba	518,572	481,546	516,053	546,571
Saskatchewan	493,706	461,359	524,566	526,685
Alberta	860,701	803,904	1,022,274	1,170,586
British Columbia	1,208,398	1,223,821	1,437,904	1,544,230
Yukon[1]	10,403	9,912	11,731	12,875
Northwest Territories	16,933	16,398	19,638	21,450
Total	11,619,937	11,115,545	12,638,424	13,386,783

Note: For every province the number of 'voters on the lists' includes Canadian Forces and Public Service electors, but does not include dependant electors nor veteran electors.

[1] *Electoral district of Yukon.*

9.4 PROVINCES AND TERRITORIES OF CANADA, DATES OF ADMISSION TO CONFEDERATION, LEGISLATIVE PROCESSES BY WHICH ADMISSION WAS EFFECTED, AND SEAT OF GOVERNMENT

Province, territory or district	Date of admission or creation	Legislative process	Seat of provincial or territorial government
Ontario	July 1, 1867	Act of Imperial Parliament – Constitution Act, 1867 (formerly The British North America Act, 1867) (Br. Stat. 1867, c.3) and Imperial Order in Council, May 22, 1867	Toronto
Quebec	July 1, 1867		Quebec
Nova Scotia	July 1, 1867		Halifax
New Brunswick	July 1, 1867		Fredericton
Manitoba	July 15, 1870	Manitoba Act, 1870 (SC 1870, c.3) and Imperial Order in Council, June 23, 1870	Winnipeg
British Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871	Victoria
Prince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873	Charlottetown
Saskatchewan	Sept. 1, 1905	Saskatchewan Act (SC 1905, c.42)	Regina
Alberta	Sept. 1, 1905	Alberta Act (SC 1905, c.3)	Edmonton
Newfoundland	Mar. 31, 1949	Newfoundland Act (formerly The British North America Act, 1949) (Br. Stat. 1949, c.22)	St. John's
Northwest Territories	July 15, 1870	Act of Imperial Parliament-Rupert's Land Act, 1868 (Br. Stat. 1868, c.105) and Imperial Order in Council, June 23, 1870	Yellowknife
Mackenzie	Jan. 1, 1920	Order in Council, Mar. 16, 1918	
Keewatin	Jan. 1, 1920		
Franklin	Jan. 1, 1920		
Yukon Territory	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c.6)	Whitehorse

9.5 FEDERAL GOVERNMENT REVENUE, FISCAL YEARS, 1985-86 TO 1990-91 (MILLION DOLLARS)

Source and type	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91[e]
Tax revenues	74,998	82,340	94,357	99,767	109,397	116,585
Personal income taxes	34,764	39,580	47,359	48,078	54,487	60,259
Corporation income taxes	9,210	9,885	10,878	11,730	12,700	12,400
Taxes on payments to non-residents	1,054	1,356	1,162	1,578	1,400	1,485
Sales tax	9,383	12,022	12,984	15,744	16,985	16,240
Motive fuel taxes	770	1,491	2,671	2,542	3,110	3,555
Alcoholic beverages and tobacco taxes	2,639	2,676	2,832	2,706	3,660	3,755
Air transportation tax	306	348	435	499	500	530
Custom duties	3,975	4,191	4,390	4,527	4,515	4,330
Other consumption taxes	187	251	615	317	364	361
Unemployment insurance contributions	8,783	9,633	10,554	11,252	10,735	12,620
Petroleum and natural gas taxes	3,489	467	−14	111	—	—
Miscellaneous taxes	438	440	491	683	941	1,050
Non-tax revenues	8,062	7,805	8,732	9,738	9,499	10,482
Natural resource revenues	224	56	52	56	45	50
Privileges, licences and permits	153	169	199	216	146	178
Sales of goods and services	2,291	2,837	3,288	2,854	2,126	2,829
Return on investments	4,334	3,871	4,190	5,577	5,997	6,336
Remittances from own enterprises	1,973	1,857	2,223	3,662	4,655	4,678
Interest	2,012	1,951	1,941	1,851	1,142	1,405
Other return on investments	349	63	26	64	200	253
Contributions to government-operated benefit plans	61	63	66	69	68	72
Bullion and coinage	144	53	178	108	155	160
Fines and penalties	45	42	38	57	35	40
Miscellaneous revenues	810	690	683	756	866	722
Transfer from provincial governments	—	24	38	45	61	95
Total, gross revenue	83,060	90,145	103,089	109,505	118,896	127,067

9.6 FEDERAL GOVERNMENT EXPENDITURE, FISCAL YEARS, 1985-86 TO 1990-91 (MILLION DOLLARS)

Function	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91[e]
General services	4,979	5,303	5,751	6,012	7,014	6,921
Executive and legislative	245	251	270	381	334	320
Administrative	2,639	2,782	3,031	3,161	3,198	3,269
Payments under government-operated benefit plans	42	41	42	44	54	57
Other general services	573	694	776	712	1,605	1,470
Contributions to employee benefit plans	1,480	1,535	1,632	1,714	1,823	1,805
Protection of persons and property	11,876	11,986	12,962	13,440	14,011	14,790
National defence	8,652	9,321	10,057	10,416	10,758	11,333
Courts of law	123	131	152	159	183	195
Correctional services	764	824	925	889	947	1,025
Police services	1,141	1,259	1,396	1,480	1,557	1,689
Regulatory services	867	87	87	89	137	131
Other protection of persons and property	329	364	345	407	429	417
Transportation and communications	3,457	3,536	3,689	3,727	3,477	3,598
Air	1,257	1,302	1,268	1,337	1,369	1,386
Road	223	166	236	242	275	263
Rail	751	920	1,184	1,015	757	790
Water	848	787	709	766	712	842
Telecommunications	187	183	204	213	209	206
Other transportation and communications	191	178	88	154	155	111
Health	7,134	7,465	7,462	7,685	7,751	7,443
Hospital care	5,333	5,512	5,393	5,435	5,335	4,854
Medical care	1,110	1,185	1,241	1,342	1,405	1,498
Preventative services	167	192	203	222	281	238
Other health	524	576	625	686	730	853

9.6 FEDERAL GOVERNMENT EXPENDITURE, FISCAL YEARS, 1985-86 TO 1990-91 (MILLION DOLLARS) (concluded)

Function	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91^{e}
Social services	34,445	36,193	37,887	39,280	43,258	47,668
Social security	27,049	28,620	29,193	30,558	32,488	35,437
Canada Pension Plan	111	126	160	156	165	178
Quebec Pension Plan	20	22	25	26	29	32
Old age security	12,525	13,445	14,349	15,202	16,229	17,502
Unemployment insurance	10,340	10,886	10,466	10,933	11,690	13,265
Workers compensation	34	37	39	41	44	46
Family allowances	2,501	2,535	2,564	2,606	2,653	2,663
Veterans' benefits	1,518	1,569	1,590	1,594	1,678	1,751
Social welfare	5,892	6,135	6,750	6,999	7,835	8,221
Social welfare assistance	4,573	4,624	5,225	5,296	5,794	6,099
Other social welfare	1,319	1,511	1,525	1,703	2,041	2,122
Tax credits and rebates	1,504	1,438	1,944	1,723	2,935	4,010
Education	3,973	4,187	4,222	4,251	4,227	4,152
Elementary and secondary	489	524	559	609	612	675
Postsecondary	2,635	2,670	2,693	2,709	2,681	2,526
Special retraining services	521	656	613	549	537	526
Other education	328	337	357	384	397	425
Resource conservation and industrial development	8,077	7,072	8,708	7,542	7,010	5,614
Agriculture	2,427	3,238	4,721	3,614	3,354	2,112
Fish and game	510	388	328	393	336	372
Forests	200	225	660	312	298	222
Mines	50	54	60	76	183	151
Oil and gas	2,893	1,041	649	691	351	296
Tourism	62	43	50	43	39	33
Trade and industry	1,306	1,374	1,584	1,700	1,791	1,688
Water	6	6	5	5	8	6
Other resource conservation and industrial development	623	703	651	708	650	734
Environment	422	446	498	530	590	638
Recreation and culture	852	931	1,028	1,044	1,110	1,091
Recreational facilities	190	209	224	234	196	223
Culture facilities	437	483	555	575	712	688
Other recreation and culture	225	239	249	235	202	180
Labour, employment and immigration	1,277	1,364	1,393	1,790	1,864	2,179
Labour and employment	1,046	1,131	1,157	1,429	1,490	1,758
Immigration	132	157	180	206	288	319
Other labour employment and immigration	99	76	56	155	86	102
Housing	1,491	1,456	1,553	1,598	1,746	1,884
Foreign affairs and international assistance	2,050	2,896	3,271	3,632	3,446	3,433
Regional planning and development	278	344	347	341	419	500
Research establishments	1,072	1,090	1,131	1,059	1,237	1,246
General purpose transfers to other government	6,799	7,234	8,080	9,104	10,030	10,044
Statutory subsidies	36	36	36	36	36	36
Income tax on privately-owned public utilities	299	258	341	301	274	274
Tax revenue guarantee payments	—	—	—	—	—	—
Payments in respect of reciprocal taxation	243	256	261	285	319	311
Payments related to provincial tax reductions	—	—	—	—	—	—
Equalization	5,376	5,771	6,386	7,290	8,161	8,163
Grants in lieu of taxes	259	288	317	341	319	338
Other general purpose transfers	586	625	739	851	921	922
Transfers to own enterprises	3,310	2,702	3,718	2,125	2,881	2,096
Debt charges	25,417	26,617	29,016	33,167	39,249	41,013
Interest	25,077	26,345	28,640	32,826	38,909	40,719
Other debt charges	340	272	376	341	340	294
Other expenditures	2	4	4	7	—	1,192
Total, gross expenditure	116,911	120,826	130,720	136,334	149,320	155,502
Surplus or deficit	−33,851	−30,681	−27,631	−26,829	−30,424	−28,435

9.7 ASSETS AND LIABILITIES OF THE FEDERAL GOVERNMENT, YEARS ENDED MARCH 31, 1986-90 (MILLION DOLLARS)

Item	1986[r]	1987[r]	1988	1989	1990
Assets					
Cash on hand and on deposit	6,599	6,196	3,973	3,928	3,592
Receivables	2,000	2,103	2,137	2,148	2,415
Advances	24,622	28,744	36,422	37,507	34,037
Securities	10,827	10,910	8,893	9,113	9,612
Other financial assets	2,404	1,952	2,404	3,535	4,389
Total, financial assets	46,452	49,905	53,829	56,231	54,045
Liabilities					
Bank overdrafts	2,934	2,895	2,735	2,381	2,563
Payables	18,292	19,263	21,413	22,817	24,129
Advances	1,568	1,861	1,899	1,932	1,905
Treasury bills	61,950	76,950	81,050	102,700	118,550
Canada Savings Bonds	44,245	44,310	53,323	47,756	40,929
Bonds and debentures	87,402	102,090	112,713	124,127	134,883
Other securities	11,833	10,415	9,452	7,026	5,482
Deposits	3,642	3,702	3,982	3,709	5,219
Other liabilities	53,273	58,132	64,663	69,772	74,824
Total, liabilities	285,139	319,618	351,230	382,220	408,484
Excess of financial assets over liabilities or (excess of liabilities over financial assets)	−238,687	−269,713	−297,401	−325,989	−354,439

9.8 GROSS DEBT OF THE FEDERAL GOVERNMENT, SELECTED FISCAL YEARS, 1866-67 TO 1989-90 (MILLION DOLLARS)

Year	Net federal debt	Gross federal debt	Components of the gross debt					
			Marketable bonds	Treasury bills	Savings bonds	Other securities	Pension plans	Other liabilities
1866-67	76	93	69	—	—	—	—	24
1917-18	1,192	1,863	1,428	75	—	—	5	355
1949-50	11,645	16,723	12,882	450	891	850	175	1,475
1974-75	24,558	55,889	14,490	5,630	12,915	51	12,978	9,825
1982-83	125,969	175,060	51,714	29,125	32,641	1,996	35,526	24,058
1983-84	162,400	212,241	58,994	41,700	38,204	3,228	39,388	30,727
1984-85	202,574	249,452	71,373	52,300	41,959	7,165	43,690	32,965
1985-86	238,687	285,139	86,957	61,950	44,245	8,366	48,370	35,251
1986-87	269,713	319,618	100,294	76,950	44,310	7,938	53,369	36,761
1987-88	297,400	351,229	110,222	81,050	53,323	7,463	58,788	40,383
1988-89	325,989	382,219	121,121	102,700	47,756	6,048	64,613	39,981
1989-90	354,439	408,483	131,810	118,550	40,929	4,696	70,997	41,501

9.9 NUMBER OF TAXPAYERS, ASSESSED INCOME AND INCOME TAX PAYABLE[1], 1988

Province or territory	Taxpayers No.	Total income assessed $'000,000	Federal tax payable $'000,000	Provincial tax payable $'000,000
Newfoundland	224,750	5,159.6	560.9	328.3
Prince Edward Island	57,520	1,301.4	138.4	78.1
Nova Scotia	392,930	10,219.0	1,215.6	672.4
New Brunswick	309,750	7,578.1	872.6	510.0
Quebec	3,172,750	84,809.5	10,154.1	14.4
Ontario	5,030,640	159,163.2	21,914.0	10,961.7
Manitoba	505,070	13,065.4	1,500.2	988.7
Saskatchewan	432,910	11,173.8	1,259.6	794.1
Alberta	1,167,290	34,206.9	4,458.0	2,145.9
British Columbia	1,486,740	43,761.7	5,626.5	2,820.6
Yukon	12,470	390.4	44.9	19.8
Northwest Territories	19,430	716.2	95.4	40.0
Outside Canada	31,630	1,079.8	194.3	43.8
Canada	12,843,870	373,075.0	48,034.4	19,417.7

[1] *Taxable returns.*

9.10 TAXFILERS BY OCCUPATION, INCOME ASSESSED AND TAX, 1988[1]

Occupational group	Taxfilers No.	Total income assessed $'000,000	Net federal tax payable $'000,000
Employees	11,527,570	294,574.8	38,389.7
Farmers	259,930	4,756.1	345.6
Fishermen	37,010	833.3	85.0
Self-employed professionals			
Accountants	12,240	802.6	131.4
Medical doctors and surgeons	36,660	4,172.7	827.6
Dentists	9,780	925.9	172.2
Lawyers and notaries	22,540	2,054.4	395.6
Engineers and architects	5,990	277.5	43.6
Entertainers and artists	21,450	348.8	38.0
Other professionals	74,230	2,266.4	309.5
Salespeople	40,250	910.8	107.0
Total business proprietors	599,070	10,233.0	1,049.6
Investors	1,076,870	30,143.9	3,221.4
Property owners	139,770	3,056.0	372.4
Pensioners	1,961,200	27,964.3	1,738.8
All others	1,755,330	10,068.5	807.2
Total	17,579,870	393,389.1	48,034.4

[1] *Includes all returns.*

9.11 CORPORATION INCOME TAXES, BY INDUSTRIAL DIVISION, 1987 (MILLION DOLLARS)

Industrial division	Book profit before taxes	Taxable income	Federal income taxes	Provincial income taxes	Total income taxes
Agriculture, forestry and fishing	885.9	807.6	102.8	63.5	166.3
Mining	5,516.6	3,048.3	873.1	384.8	1,257.9
Manufacturing	22,415.6	15,215.7	3,183.7	1,728.0	4,911.7
Construction	2,436.5	2,305.9	415.4	180.2	595.6
Transportation, communications and other utilities	7,327.9	4,753.7	1,453.7	604.0	2,057.7
Wholesale trade	5,487.1	4,504.0	1,150.4	455.5	1,605.9
Retail trade	2,854.9	3,124.3	708.0	274.1	982.1
Finance	31,149.8	8,777.8	2,659.7	1,003.2	3,662.9
Services	4,099.7	4,028.0	801.5	347.7	1,149.2
Total, all industries	82,174.0	46,565.3	11,348.3	5,041.0	16,389.3

9.12 GROSS GENERAL REVENUE[1] OF PROVINCIAL AND TERRITORIAL GOVERNMENTS, FISCAL YEARS, 1986-87 TO 1990-91 (MILLION DOLLARS)

Source	1986-87	1987-88	1988-89	1989-90	1990-91[e]
Income taxes	28,804.3	33,713.9	37,175.8	41,292.7	44,579.3
Personal income taxes	24,579.7	28,518.8	31,156.1	34,638.8	37,673.2
Corporation income taxes	4,224.6	5,195.1	6,019.7	6,653.9	6,906.1
Real property taxes	1,025.5	1,041.0	1,157.9	1,260.1	2,057.5
Consumption taxes	18,971.7	21,074.8	23,872.9	25,808.7	27,761.9
General sales tax	12,976.2	14,354.6	16,521.2	17,952.5	19,084.3
Motive fuel taxes	3,285.0	3,830.1	4,188.8	4,164.5	4,610.3
Alcoholic beverages and tobacco taxes	1,997.5	2,098.5	2,316.4	2,446.0	2,740.3
Other consumption taxes	713.0	791.6	846.5	1,245.7	1,327.0
Health and social insurance levies	7,649.0	8,555.8	9,478.2	9,750.3	9,383.1
Health insurance premiums	3,969.5	4,312.6	4,684.0	4,775.0	3,616.9
Workers compensation contributions	3,679.5	4,243.2	4,794.2	4,975.3	5,766.2
Miscellaneous taxes	2,649.4	3,050.6	3,664.5	4,384.1	6,883.7
Natural resource revenues	4,381.8	5,675.6	5,273.5	5,542.9	5,991.1
Privileges, licences and permits	2,500.8	2,715.6	2,966.6	3,233.7	3,742.7
Sales of goods and services	2,263.7	2,332.0	2,466.5	2,169.2	2,296.1
Return on investments	10,804.9	11,153.6	12,209.1	13,033.9	13,246.7
Liquor board profits	2,156.7	2,110.2	2,251.6	2,429.6	2,452.4
Other return on investment	8,648.2	9,043.4	9,957.5	10,604.3	10,794.3
Other revenue from own sources	781.1	615.2	687.8	843.6	903.8
General purpose transfers from other levels of government	6,653.4	7,860.3	8,647.6	9,524.6	9,784.9
Specific purpose transfers from other levels of government	14,259.1	14,803.8	15,491.6	15,993.6	15,858.9
Specific purpose transfers from federal government	14,083.3	14,723.3	15,218.8	15,680.0	15,553.5
Specific purpose transfers from local governments	100.6	80.5	122.8	159.4	143.4
Specific purpose transfers from government enterprises	75.2	—	150.0	154.2	162.0
Total, gross revenue	100,744.7	112,592.2	123,092.0	132,837.4	142,489.7

[1] *Financial Management Systems Basis.*

9.13 GROSS GENERAL EXPENDITURE[1] OF PROVINCIAL AND TERRITORIAL GOVERNMENTS, FISCAL YEARS, 1986-87 TO 1990-91 (MILLION DOLLARS)

Function	1986-87	1987-88	1988-89	1989-90	1990-91[e]
General services	5,638.5	7,040.8	6,716.0	6,973.6	7,856.5
Protection of persons and property	3,523.2	3,948.5	4,062.9	4,213.9	4,557.1
Transportation and communications	5,761.6	5,758.4	5,912.6	6,758.7	7,106.2
Health	29,009.7	30,876.1	33,602.6	37,138.7	39,385.4
Hospital care	17,663.7	18,664.0	20,230.1	22,204.8	23,725.8
Medical care	9,383.5	10,201.2	11,089.9	12,125.4	12,630.2
Preventive care	1,014.4	1,055.6	1,270.6	1,621.7	1,718.9
Other health	948.1	955.3	1,012.0	1,186.8	1,310.5
Social services	17,019.2	18,718.5	19,551.1	21,052.1	22,765.0
Education	22,375.6	23,131.9	24,971.4	25,943.3	28,057.7
Elementary and secondary	13,924.2	14,363.0	15,660.9	16,350.8	17,773.9
Postsecondary	7,330.1	7,615.5	8,153.5	8,499.4	9,178.5
Special retraining services	879.8	940.0	913.6	867.4	894.1
Other education	241.5	213.4	243.4	225.7	211.2
Resource conservation and industrial development	7,589.9	6,510.7	7,581.0	6,843.7	6,867.8
Environment	1,216.8	1,300.2	1,702.0	1,643.6	1,848.0
Recreation and culture	1,453.4	1,415.2	1,451.2	1,645.3	1,758.0
Regional planning and development	695.8	696.9	838.3	1,004.8	966.6
General purpose transfers to local government	1,953.7	2,022.6	2,528.4	1,636.0	2,226.3
Debt charges	13,690.0	15,143.7	15,920.8	16,765.6	17,555.2
Other expenditures	2,929.1	2,791.7	3,175.9	3,231.9	3,200.8
Total, gross expenditure	112,856.5	119,355.2	128,014.2	134,851.2	144,150.6
Surplus or deficit	−12,111.8	−6,763.0	−4,922.2	−2,013.8	−1,660.9

[1] *Financial Management System Basis.*

9.14 PROVINCIAL GOVERNMENT BALANCE SHEET, CANADA TOTAL, YEARS ENDED MARCH 31, 1984-88 (MILLION DOLLARS)

Item	1984	1985	1986	1987	1988
Financial assets					
Cash on hand and on deposit	17,859	19,988	19,196	22,272	24,498
Receivables	6,633	7,019	7,589	7,153	6,942
Advances	9,592	10,976	11,320	12,702	13,894
Securities	52,069	56,176	60,824	62,816	66,119
Other financial assets	772	1,084	814	1,220	1,135
Total, financial assets	86,925	95,243	99,743	106,163	112,588
Liabilities					
Bank overdrafts	493	569	2,450	2,971	2,918
Payables	5,886	6,658	8,189	8,712	8,734
Advances	2,945	3,105	3,463	3,496	3,563
Treasury bills	4,388	4,247	4,339	4,638	5,240
Savings bonds	1,939	2,671	2,733	2,808	3,520
Bonds and debentures	73,194	80,932	89,405	98,559	104,091
Other securities	3,414	6,340	8,431	13,078	13,090
Deposits	1,657	1,622	1,687	2,139	5,773
Other liabilities	11,780	13,813	16,390	18,958	22,063
Total, liabilities	105,696	119,957	137,087	155,359	168,992
Excess of financial assets over liabilities or (excess of liabilities over financial assets)	−18,771	−24,714	−37,344	−49,196	−56,404

9.15 GENERAL REVENUE[1] OF LOCAL GOVERNMENTS, BY SOURCE AND TYPE, FISCAL YEARS, 1985-89 (THOUSAND DOLLARS)

Source and type	1985	1986	1987	1988	1989^e
Property and related taxes	14,500,620	15,722,332	17,009,059	18,197,568	19,773,820
Miscellaneous taxes	121,704	154,681	201,080	161,702	172,163
Amusement taxes	26,771	27,791	30,898	27,251	29,070
Other taxes	94,933	126,890	170,182	134,451	143,093
Privileges, licences and permits	246,034	281,514	341,092	323,806	341,366
Sales of goods and services	4,424,867	4,894,334	5,511,245	5,436,078	5,781,737
Return on investments	1,292,275	1,284,685	1,337,579	1,252,408	1,330,674
Other revenue from own sources	723,212	772,206	881,206	703,922	747,956
General purpose transfers from other levels of government	2,340,440	2,453,433	2,585,246	2,700,850	2,801,806
General purpose transfers from federal government	252,727	272,365	291,935	294,593	308,311
General purpose transfers from provincial governments	1,635,301	1,710,300	1,821,012	1,882,643	1,937,473
General purpose transfers from government enterprises	452,412	470,768	472,299	523,614	556,022
Specific purpose transfers from other levels of government	17,403,201	18,129,913	19,165,112	20,080,986	21,198,979
Specific purpose transfers from federal government	182,004	163,712	181,939	156,770	161,926
Specific purpose transfers from provincial governments	17,135,725	17,877,576	18,896,707	19,833,290	20,953,351
Specific purpose transfers from government enterprises	85,472	88,625	86,466	90,926	83,702
Total, gross revenue	41,052,353	43,693,098	47,031,619	48,857,320	52,148,501

[1] *Financial Management System Basis.*

9.16 GENERAL EXPENDITURE[1] OF LOCAL GOVERNMENTS, FISCAL YEARS, 1985-89 (THOUSAND DOLLARS)

Function	1985	1986	1987	1988	1989^{e}
General services	2,153,715	2,271,138	2,498,087	2,687,850	2,875,829
Protection of persons and property	3,406,886	3,621,569	3,816,221	4,155,824	4,505,313
Transportation and communications	4,292,465	4,523,389	4,905,150	5,233,364	5,718,818
Health	2,433,727	2,643,753	2,816,227	2,844,656	2,954,406
Social services and social welfare	1,493,062	1,680,222	1,905,064	2,076,364	2,250,971
Education	17,036,676	17,880,082	19,154,686	20,004,742	21,440,451
Resource conservation and industrial development	440,008	532,254	569,534	504,170	539,125
Environment	2,980,406	3,363,452	3,689,186	4,073,077	4,695,755
Recreation and culture	2,621,142	2,707,780	3,019,445	3,175,929	3,398,869
Housing	226,070	239,097	219,074	208,560	236,522
Regional planning and development	358,096	391,235	464,240	424,771	453,277
Debt charges	3,278,918	3,340,280	3,323,048	3,390,510	3,502,915
Other expenditure	1,162,323	1,223,583	1,324,039	1,248,232	1,192,724
Total, gross expenditure	41,883,494	44,417,834	47,704,001	50,028,049	53,764,975
Surplus or deficit	−831,141	−724,736	−672,382	−1,170,729	−1,616,474

[1] *Financial Management System Basis.*

9.17 LOCAL GOVERNMENT BALANCE SHEET, CANADA TOTAL, YEARS ENDED DECEMBER 31, 1984-88 (MILLION DOLLARS)

Item	1984	1985	1986	1987	1988^{e}
Financial assets					
Cash on hand and on deposit	4,266	3,989	3,979	4,259	4,132
Receivables	3,988	4,216	4,513	4,725	4,753
Advances	1,862	1,939	1,905	1,998	2,042
Securities	3,259	3,794	4,476	4,935	5,404
Other financial assets	1,360	1,457	1,637	1,617	1,605
Total financial assets	14,735	15,395	16,510	17,534	17,936
Liabilities					
Payables	3,346	3,588	3,851	4,143	4,369
Bank loans	1,015	1,035	1,032	1,056	1,012
Advances	2,277	2,489	2,449	2,754	2,908
Bonds and debentures	25,801	26,345	27,471	28,453	29,426
Other liabilities	831	958	993	1,270	1,413
Total, liabilities	33,270	34,415	35,796	37,676	39,128
Excess of financial assets over liabilities or (excess of liabilities over financial assets)	−18,535	−19,020	−19,286	−20,142	−21,192
Total financial assets per capita ($)	590	612	651	684	692
Total liabilities per capita ($)	1,332	1,368	1,412	1,470	1,509
Population ('000)	24,979	25,166	25,352	25,625	25,923

9.18 PUBLIC SERVICE EMPLOYEES, BY DEPARTMENT, SEX AND LANGUAGE GROUP, 1989

Department	Men		Women		Anglophones		Francophones		Total
	No.	%	No.	%	No.	%	No.	%	
Agriculture	6,937	69.3	3,073	30.7	7,809	78.1	2,189	21.9	10,010
Atlantic Canada Opportunities Agency	148	49.5	151	50.5	208	69.6	91	30.4	299
Bureau of Pensions Advocates	36	28.1	92	71.9	100	78.7	27	21.3	128
Canada Labour Relations Board	29	33.0	59	67.0	32	36.4	56	63.6	88
Canadian Aviation Safety Board	108	59.0	75	41.0	124	67.8	59	32.2	183
Canadian Centre for Management Development	11	20.8	42	79.2	10	18.9	43	81.1	53
Canadian Forestry Service	901	72.3	345	27.7	989	79.6	254	20.4	1,246
Canadian Grain Commission	521	72.5	198	27.5	671	93.3	48	6.7	719
Canadian Human Rights Commission	61	34.1	118	65.9	108	60.3	71	39.7	179
Canadian Intergovernmental Conference Secretariat	7	41.2	10	58.8	—	—	17	100.0	17
Canadian International Development Agency	613	50.5	602	49.5	506	41.6	709	58.4	1,215
Canadian International Trade Tribunal	34	46.6	39	53.4	33	45.2	40	54.8	73
Canadian Pension Commission	6	22.2	21	77.8	22	81.5	5	18.5	27
Canadian Radio-television and Telecommunications Commission	176	47.8	192	52.2	189	51.4	179	48.6	368
Canadian Secretariat	1	100.0	—	—	1	100.0	—	—	1
Canadian Space Agency	—	—	1	100.0	1	100.0	—	—	1
Civil Aviation Tribunal	1	20.0	4	80.0	3	60.0	2	40.0	5
Communications	1,380	58.8	966	41.2	1,477	63.0	869	37.0	2,346
Consumer and Corporate Affairs	1,236	56.5	951	43.5	1,355	62.0	832	38.0	2,187
Correctional Service of Canada	7,179	69.9	3,096	30.1	6,773	65.9	3,501	34.1	10,275
Emergency Preparedness Canada	1	100.0	—	—	1	100.0	—	—	1
Employment and Immigration	8,372	35.1	15,471	64.9	15,589	65.4	8,247	34.6	23,843
Energy, Mines and Resources	2,875	66.5	1,446	33.5	3,209	74.3	1,112	25.7	4,321
Environment	6,417	70.9	2,640	29.1	7,138	78.9	1,914	21.1	9,057
External Affairs	2,528	59.1	1,751	40.9	2,964	69.3	1,315	30.7	4,279
Federal Court of Canada	89	38.4	143	61.6	112	48.3	120	51.7	232
Federal-Provincial Relations Office	33	52.4	30	47.6	34	54.0	29	46.0	63
Finance	460	50.7	448	49.3	588	64.8	319	35.2	908
Fisheries and Oceans	4,006	72.8	1,494	27.2	4,653	84.6	845	15.4	5,500
Hazardous Materials Information Review Commission	1	100.0	—	—	1	100.0	—	—	1
Immigration and Refugee Board	127	36.6	220	63.4	208	59.9	139	40.1	347
Indian Affairs and Northern Development	1,766	44.7	2,187	55.3	3,304	83.6	648	16.4	3,953
International Joint Commission	22	53.7	19	46.3	28	96.6	1	3.4	41
Investment Canada	51	42.5	69	57.5	84	70.0	36	30.0	120
Justice	692	43.0	919	57.0	1,046	64.9	565	35.1	1,611
Labour	417	47.8	455	52.2	564	64.7	308	35.3	872
Law Reform Commission of Canada	9	26.5	25	73.5	10	29.4	24	70.6	34
National Archives of Canada	423	54.2	357	45.8	480	61.5	300	38.5	780
National Defence (civilian)	21,537	66.7	10,741	33.3	25,910	80.3	6,354	19.7	32,278
National Energy Board	178	58.7	125	41.3	225	74.3	78	25.7	303
National Farm Products Marketing Council	10	45.5	12	54.5	10	45.5	12	54.5	22
National Health and Welfare	2,999	35.3	5,491	64.7	6,427	75.8	2,050	24.2	8,490
National Library of Canada	149	28.8	368	71.2	326	63.1	191	36.9	517
National Museums of Canada	551	54.9	453	45.1	636	63.3	368	36.7	1,004
National Parole Board	69	27.1	186	72.9	150	59.1	104	40.9	255
National Revenue (Customs and Excise	5,320	54.0	4,540	46.0	7,190	72.9	2,669	27.1	9,860
National Revenue (Taxation)	9,098	49.2	9,381	50.8	13,352	72.3	5,127	27.7	18,479
National Transportation Agency	256	49.3	263	50.7	314	60.5	205	39.5	519
Office of Privatization and Regulatory Affairs	28	38.4	45	61.6	54	74.0	19	26.0	73
Office of the Chief Electoral Officer	35	53.8	30	46.2	9	13.8	56	86.2	65
Office of the Commissioner for Federal Judicial Affairs	13	39.4	20	60.6	13	39.4	20	60.6	33

9.18 PUBLIC SERVICE EMPLOYEES, BY DEPARTMENT, SEX AND LANGUAGE GROUP, 1989 (concluded)

Department	Men		Women		Anglophones		Francophones		Total
	No.	%	No.	%	No.	%	No.	%	
Office of the Commissioner of Official Languages	69	43.9	88	56.1	44	28.0	113	72.0	157
Office of the Coordinator, Status of Women	2	5.4	35	94.6	21	56.8	16	43.2	37
Office of the Governor General's Secretary	45	38.8	71	61.2	34	29.3	82	70.7	116
Office of the Grain Transportation Agency Administrator	16	55.2	13	44.8	28	96.6	1	3.4	29
Office of the Superintendent of Financial Institutions	211	58.6	149	41.4	263	73.3	96	26.7	360
Offices of the Information and Privacy Commissioners	36	54.5	30	45.5	38	57.6	28	42.4	66
Patented Medicine Prices Review Board	8	42.1	11	57.9	12	63.2	7	36.8	19
Privy Council Office	151	40.3	224	59.7	194	51.7	181	48.3	375
Procurement Review Board	1	25.0	3	75.0	2	50.0	2	50.0	4
Public Service Commission	765	35.5	1,387	64.5	809	37.6	1,343	62.4	2,152
Public Service Staff Relations Board	60	40.8	87	59.2	61	43.3	80	56.7	147
Public Works	5,286	70.8	2,176	29.2	5,256	70.5	2,204	29.5	7,462
Regional Industrial Expansion	1,217	53.2	1,072	46.8	1,483	64.8	806	35.2	2,289
Registry of the Competition Tribunal	2	20.0	8	80.0	3	30.0	7	70.0	10
Royal Canadian Mounted Police (Public Service employees)	601	17.9	2,751	82.1	2,667	79.6	685	20.4	3,352
Royal Canadian Mounted Police External Review Committee	2	100.0	—	—	1	50.0	1	50.0	2
Royal Canadian Mounted Police Public Complaints Commission	2	100.0	—	—	1	50.0	1	50.0	2
Science and Technology	22	71.0	9	29.0	25	80.6	6	19.4	31
Secretary of State of Canada	970	33.5	1,922	66.5	920	31.8	1,972	68.2	2,892
Solicitor General	108	39.9	163	60.1	180	66.7	90	33.3	271
Statistics Canada	2,135	49.1	2,209	50.9	2,709	62.4	1,635	37.6	4,344
Supply and Services	4,367	47.8	4,762	52.2	5,324	58.3	3,805	41.7	9,129
Supreme Court of Canada	57	48.3	61	51.7	58	49.2	60	50.8	118
Tax Court of Canada	24	36.4	42	63.6	25	37.9	41	62.1	66
Transport	14,965	77.6	4,320	22.4	15,076	78.2	4,202	21.8	19,285
Treasury Board (Office of the Comptroller General)	81	60.9	52	39.1	96	72.2	37	27.8	133
Treasury Board (Secretariat)	339	52.0	313	48.0	418	64.1	234	35.9	652
Veterans Affairs	1,361	38.3	2,194	61.7	2,129	60.0	1,421	40.0	3,555
Veterans Appeal Board	6	23.1	20	76.9	22	84.6	4	15.4	26
Western Economic Diversification	140	50.9	135	49.1	249	90.5	26	9.5	275
Total	120,966	56.4	93,671	43.6	153,188	71.4	61,353	28.6	214,494[1]

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[1] *Total number of employees is drawn from the Common Government of Canada Population Reporting File, which is based on payroll information of the Department of Supply and Services on Dec. 31, 1989. Other population data are derived from the Commission's statistical file. There is consequently a slight difference between the sum of the figures and the total*

9.19 GOVERNMENT AND GOVERNMENT BUSINESS ENTERPRISE EMPLOYMENT, FISCAL YEARS 1988-89 AND 1989-90 (AVERAGES)

Province or territory	Federal government employees		Provincial government employees		Local government employees		Total government employees	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Newfoundland and Labrador	8,101	8,298	23,228	22,599	2,812	2,942	34,141	33,839
Prince Edward Island	3,410	3,346	4,924	5,045	424	424	8,758	8,815
Nova Scotia	31,789	31,212	22,795	23,140	7,520	8,064	62,104	62,416
New Brunswick	13,240	13,178	36,745	37,547	4,378	4,660	54,363	55,385
Quebec	67,185	67,836	105,537	108,717	66,325	68,655	239,047	245,208
Ontario	140,507	143,208	133,639	131,082	151,190	157,607	425,336	431,897
Manitoba	17,294	17,053	19,828	20,029	10,936	11,097	48,058	48,179
Saskatchewan	9,823	9,786	23,106	24,420	11,738	12,349	44,667	46,555
Alberta	25,246	25,438	69,094	72,070	33,617	33,815	127,957	131,323
British Columbia	36,387	36,464	50,625	46,711	30,762	31,933	117,774	115,108
Yukon	1,182	1,165	2,497	2,717	259	281	3,938	4,163
Northwest Territories	1,571	1,507	5,886	6,208	1,255	1,371	8,712	9,086
Outside Canada	15,740	16,385	—	—	—	—	15,740	16,385
Total	371,476	374,874	497,902	500,283	321,214	333,198	1,190,592	1,208,355

	Federal government business enterprise employees		Provincial government business enterprise employees		Total government business enterprise employees	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Newfoundland and Labrador	5,424	5,321	3,295	3,072	8,719	8,393
Prince Edward Island	930	918	283	298	1,213	1,216
Nova Scotia	6,071	5,394	4,935	4,946	11,006	10,340
New Brunswick	7,561	7,000	4,420	4,415	11,981	11,415
Quebec	47,765	39,833	35,714	35,859	83,479	75,692
Ontario	68,387	60,727	41,945	44,411	110,332	105,138
Manitoba	14,581	12,282	12,504	12,931	27,085	25,213
Saskatchewan	6,268	5,714	12,421	13,148	18,689	18,862
Alberta	17,896	16,313	16,516	17,441	34,412	33,754
British Columbia	16,307	14,074	21,805	21,830	38,112	35,904
Yukon	461	445	76	94	537	539
Northwest Territories	543	355	169	175	712	530
Outside Canada	5,677	5,233	—	—	5,677	5,233
Total	197,870	173,609	154,082	158,618	351,952	332,227

9.20 GOVERNMENT AND GOVERNMENT BUSINESS ENTERPRISE REMUNERATION, FISCAL YEARS, 1988-89 AND 1989-90 (MILLION DOLLARS)

Province or territory	Federal government remuneration		Provincial/territorial government remuneration		Local government remuneration		Total government remuneration	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Newfoundland and Labrador	282	307	551	579	64	69	897	955
Prince Edward Island	116	121	111	120	9	9	236	250
Nova Scotia	1,075	1,123	539	616	162	179	1,776	1,918
New Brunswick	440	469	930	1,005	120	128	1,490	1,602
Quebec	2,351	2,487	3,191	3,471	1,927	2,106	7,469	8,064
Ontario	5,103	5,376	3,932	4,191	3,960	4,402	12,995	13,969
Manitoba	585	609	554	582	335	356	1,474	1,547
Saskatchewan	351	367	591	645	288	299	1,230	1,311
Alberta	838	885	1,868	1,972	955	1,014	3,661	3,871
British Columbia	1,256	1,319	1,362	1,411	841	920	3,459	3,650
Yukon	46	50	89	104	9	10	144	164
Northwest Territories	67	76	217	233	32	37	316	346
Outside Canada	589	594	—	—	—	—	589	594
Total	13,098	13,783	13,934	14,927	8,702	9,528	35,734	38,238

Province or territory	Federal government business enterprise remuneration		Provincial government business enterprise remuneration		Total government business enterprise remuneration	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Newfoundland and Labrador	170	174	95	98	265	272
Prince Edward Island	28	28	6	7	34	35
Nova Scotia	190	175	148	159	338	334
New Brunswick	255	251	141	151	396	402
Quebec	1,714	1,406	1,425	1,377	3,139	2,783
Ontario	2,316	1,990	1,691	1,856	4,007	3,846
Manitoba	490	430	412	448	902	878
Saskatchewan	198	190	423	462	621	652
Alberta	637	597	484	537	1,121	1,134
British Columbia	551	459	721	757	1,272	1,216
Yukon	16	16	3	4	19	20
Northwest Territories	22	14	8	9	30	23
Outside Canada	204	190	—	—	204	190
Total	6,791	5,920	5,557	5,865	12,348	11,785

Sources

Elections Canada.
House of Commons.
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Statistics Canada.

Chapter 10

W.J. Topley/National Archives of Canada/PA 42356

THE LEGAL SYSTEM

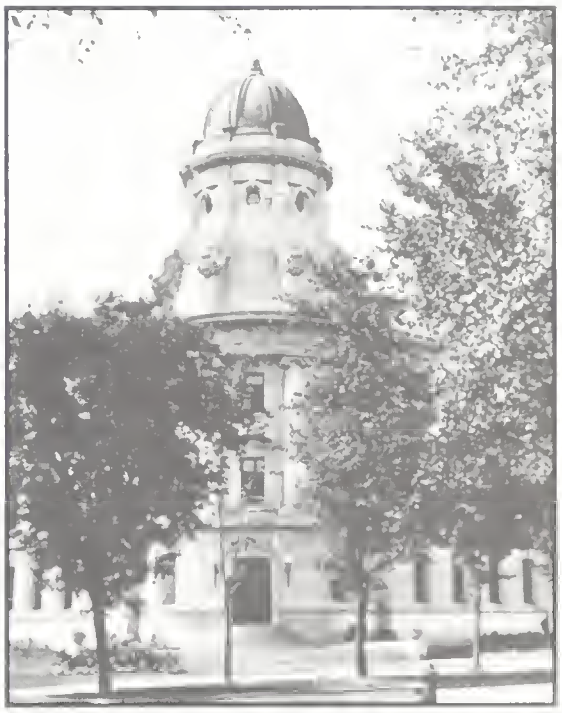
10.1 INTRODUCTION

CANADA'S JUDICIAL SYSTEM is dual in nature, reflecting not only the division of democratic power between the federal and provincial legislatures, but also our multicultural heritage. Canada's legal structure is based on two of the world's basic legal systems; common law, used by nine Canadian provinces, and le droit civil, used by Quebec in its private law.

Common law has its origin in 11th century England. A system of rules based on statutes and the precedents of previous court decisions, it is used in most Commonwealth countries and in the United States, and allows the law to change and grow with the times by giving courts the power to modify an earlier common law principle. In Canada, the federal or provincial legislatures can also, when necessary, enact a statute to override common law.

Quebec's non-criminal or civil law is based on le droit civil, which is used by many Western European countries. It consists of a legal code of simple but comprehensive rules that embody general principles of law. In theory, when considering a case a court applying le droit civil would not consult previous court decisions; it would look for a specific rule in the civil code. Quebec's Civil Code was enacted in 1866 and is based on the legal code used by Napoleon.

In practice, both common law and le droit civil often differ from their theory. A common law based on thousands of pages of court decisions may be relatively simple and easy to understand; in le droit civil, the same principle may be based on three brief articles in Quebec's Civil Code but its meaning may be open to many interpretations. To determine the meaning of the code's rules, Quebec's courts do in fact refer to prior decisions or the work of respected legal authors. Consequently, the decisions in similar cases can be remarkably alike under common law and le droit civil; only the method differs.



Dept. of the Interior/National Archives of Canada/PA 47878

Entrance to Law Court, Winnipeg, Manitoba.

10.2 CANADIAN LAW

Within Canada's legal system, two separate forms of law deal with disputes or violations. Civil or non-criminal law is used to settle private disputes between individuals and other private parties. Civil cases, or suits, arise because two parties disagree on a matter involving financial transactions, property, contracts, a private injury (called a tort) or civil rights.

In Canada, civil law is based on common law; except in Quebec, where it is governed by the Civil Code. Authority to pass legislation on civil law matters is divided between Parliament and the provincial and territorial legislatures. The provinces and territories have jurisdiction over contracts, torts and property laws, and both levels of government have the power to make tax laws and laws regulating the activities of corporations. Bankruptcy, insolvency, patents, copyrights, and banking laws fall under Parliament's jurisdiction.

Criminal law deals with crime and punishment; in this case a crime is an act against society, as opposed to a dispute between individuals. Canada's criminal law system is based on the Constitution Act, formerly the British North America Act of 1867. Section 91(27) gives the federal

Sydney Turk/National Archives of Canada/PA-73702

Mounted Police, Moose Jaw, Saskatchewan, circa 1909.

government exclusive legislative authority in criminal matters including procedure, with the exception of the constitution of courts of criminal jurisdiction. Section 92(14) and (15) give provincial legislatures the power to make and enforce their own laws concerning the administration of justice in the province. The provinces thus organize and run their own courts and impose punishment by fine, penalty or imprisonment.

Criminal offences fit into three categories; indictable, summary conviction, and dual procedure. Indictable offences violate the Criminal Code or a federal statute, and are tried by a more complex and formal procedure than summary conviction offences. Summary conviction offences are not specifically indictable and include offences against the Criminal Code, federal and provincial statutes, and municipal bylaws. They range from parking violations and minor upsets to public safety, to more serious charges, such as assault. The maximum penalty in a summary conviction is a $2,000 fine or six months' imprisonment. A dual procedure offence allows the prosecutor to decide whether it will be prosecuted as a summary conviction or an indictable offence.

The procedure followed in prosecuting indictable and summary conviction offences is defined in the Criminal Code of Canada. The Code was introduced in 1892, by Justice Minister Sir John Thompson, and came into force in July, 1893. It is based on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbidge's *Digest of the Canadian Criminal Law*, and relevant Canadian statutes. Section 2 of the Code divides the responsibility for prosecuting criminal cases between the provincial and federal governments. Provincial courts have exclusive jurisdiction over summary conviction offences and certain indictable offences. For other indictable offences, the accused is given a choice between being tried by a provincial court judge, a higher judge, or a higher judge and a jury. More serious offences (such as murder, sexual assault or treason) are in the exclusive jurisdiction of a superior court, and are usually tried by a jury.

Revised and amended frequently, the Criminal Code presently includes offences relating to public order and the administration of law, firearms, sexual offences, invasion of privacy, disorderly conduct, fraud, gaming and betting and offences against a person or their reputation. As courts build up a body of interpretation, recent amendments to the Code concerning sexual assault, changes in sentencing, and the Charter of Rights will have a substantial impact on criminal law in Canada.

HUMAN RIGHTS

Included in the 1982 Constitution Act, the Canadian Charter of Rights and Freedoms applies to all levels of government, and protects the basic rights and freedoms essential to a free and democratic society. The Charter entrenches the same concepts included in the Canadian Bill of Rights (RSC 1970, Appendix III) and overlaps the Canadian Human Rights Act, passed in 1977. This act set out specific rights and obligations and established the Canadian Human Rights Commission and a privacy commissioner to administer them.

To control abuse of the rights and freedoms granted all Canadians, another section of the Charter also states that rights and freedoms are subject to limits prescribed by law that can be demonstrably justified in a free and democratic society.

10.3 COURTS AND THE JUDICIARY

The Constitution also divides the responsibility for administering the courts between the federal and provincial governments. Section 92(14) gives provincial legislatures the authority to establish supreme courts, courts of appeal, county courts and provincial courts. The governments of Quebec and Nova Scotia have also chosen to use this power to create municipal courts. The federal government, under Section 101, is responsible for organizing a general court of appeal for Canada, and for establishing additional courts if necessary. The Governor General appoints judges for the superior, district and county courts under Section 96, and Parliament sets their salaries under Section 100.

Court operation costs are also split between the various levels of government. The federal government is responsible for the Supreme Court, the Federal Court of Canada, and the Tax Court of Canada, as well as the Office of the Commissioner for Federal Judicial Affairs. All other expenses are the responsibility of the provinces. Under the Minister of Justice, the Office of the Commissioner for Federal Judicial Affairs takes care of administrative matters pertaining to the Canadian Judicial Council and all federally appointed judges. Its duties include the administration of judge's salaries, the judicial appointments process, and any other tasks assigned by the Minister of Justice. The Canadian Judicial Council organizes conferences and educational seminars for federally appointed judges. It also acts as a focal point for discussing judicial issues, and conducts investigations into allegations or complaints regarding any federally appointed judge. The federal government is also responsible for appointing and paying provincial, territorial, superior and county court judges.

Lawyers are, of course, key to the legal system. As officers of the court, they represent parties in civil and criminal proceedings, providing assistance and advice to individuals, organizations and institutions, including government. Every Canadian lawyer is both barrister and solicitor. A barrister is a lawyer who appears for a client in court, and a solicitor is a lawyer who primarily advises and assists. In Quebec, the profession is divided between advocates (lawyers) and notaries. An advocate is a barrister and a solicitor, while a notary prepares documents such as wills, marriage contracts, and deeds of sales. A notary may also appear in court for non-contentious matters, such as adoption proceedings.

Crown prosecutors are employed by the Department of Justice, based in Ottawa. In provinces where there are Department of Justice offices, the Crown is represented in indictable appeals by regular staff prosecutors. If there is no regional office in the area, the lawyer who appeared at the trial will usually represent the Crown on appeal.

FEDERAL JUDICIARY

The Supreme Court of Canada is the ultimate court of appeal in Canada for constitutional, criminal and civil cases, and its jurisdiction includes the civil law of Quebec and the common law of the nine common-law provinces. In most cases, the Court hears appeals only if permission to appeal has been granted. Permission is given if the Court believes a question of public importance or an important issue of law is involved, and should be decided by the Court. The right to appeal may also be granted by a provincial appellate court when one of its judgements is questioned.

The Court reviews cases from the 12 provincial and territorial courts of appeal and from the appeal division of the Federal Court of Canada. The Court also advises on questions referred to it by the Governor-in-Council, and private bills referred to it by the Senate or the House of Commons. Unless special permission is given, the only persons who may appear before the Court to argue, aside from the litigants, are lawyers from any Canadian province. Established in 1875, the Supreme Court sits only in Ottawa and consists of a Chief Justice and nine associate (known as puisne) judges, three of whom must be appointed from Quebec. In all cases, the judgement of the Supreme Court of Canada is final and conclusive.

The Federal Court of Canada is a superior court with civil and criminal jurisdiction. Established in 1971, it replaced the Exchequer Court of Canada and was created by Parliament, under Section 101, for the better administration of laws in Canada.

The court has an appeal division and a trial division. The appeal division consists of the Chief Justice and 10 other judges. The trial division consists of the Associate Chief Justice and 13 other judges. Every judge is an ex officio member of the division of which he or she is not a regular member. While all judges must live in or near the National Capital Region, both divisions of the court can sit anywhere in Canada. The place and time of the sittings must be arranged to suit the convenience of the litigants. (For lists of the judges sitting on the Supreme Court, the Federal Court, and the Tax Court of Canada, please refer to Table 10.1.)

PROVINCIAL AND TERRITORIAL JUDICIARY

Each province has the authority to establish supreme courts, courts of appeal and county courts, and can also allow municipalities to operate courts. The Governor General appoints judges for the superior, district and country courts. Under Section 92(14) of the Constitution, the legislature of each province is allowed to make laws relating to the administration of justice in that province; this includes the constitution, organization and maintenance of civil and criminal jurisdiction courts. In 1971, the Yukon and Northwest Territories Acts were both amended to allow territorial governments to assume responsibility for the administration of justice, with the exception of criminal prosecutions. Both territories have supreme courts, courts of appeal and territorial courts.

WOMEN IN THE JUDICIAL SYSTEM

Brett Martin was the first Canadian woman to break the barrier against females becoming lawyers. She was called to the bar in 1897, just four years after the Law Society of Upper Canada reversed its position of denying women the right to enter law school.

Almost 90 years later, in 1982, Bertha Wilson was the first woman appointed to the Supreme Court of Canada in its 107-year history, after also having been the first woman appointed to the Ontario Court of Appeal. Judge Wilson was involved in many precedent-setting judgements, most notably in the areas of abortion and domestic violence. Although she retired in January 1991, Wilson has been followed to the highest court by two other female Supreme Court Justices—Claire L'Heureux-Dubé and Beverley McLachlin.

Canada's first female federal justice minister is Kim Campbell, who was appointed in 1990.

National Archives of Canada/C-9750

Supreme Court of Canada, 1894.

THE CANADIAN CHARTER OF RIGHTS AND FREEDOMS

"Whereas Canada is founded upon principles that recognize the supremacy of God and the rule of law: 1.) ***The Canadian Charter of Rights and Freedoms*** *guarantees the rights and freedoms set out in it subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society."*

That short preamble and first section, titled Guarantee of Rights and Freedoms, is the first of 34 that define the rights to which all Canadians are entitled under the law, and the way they are administered.

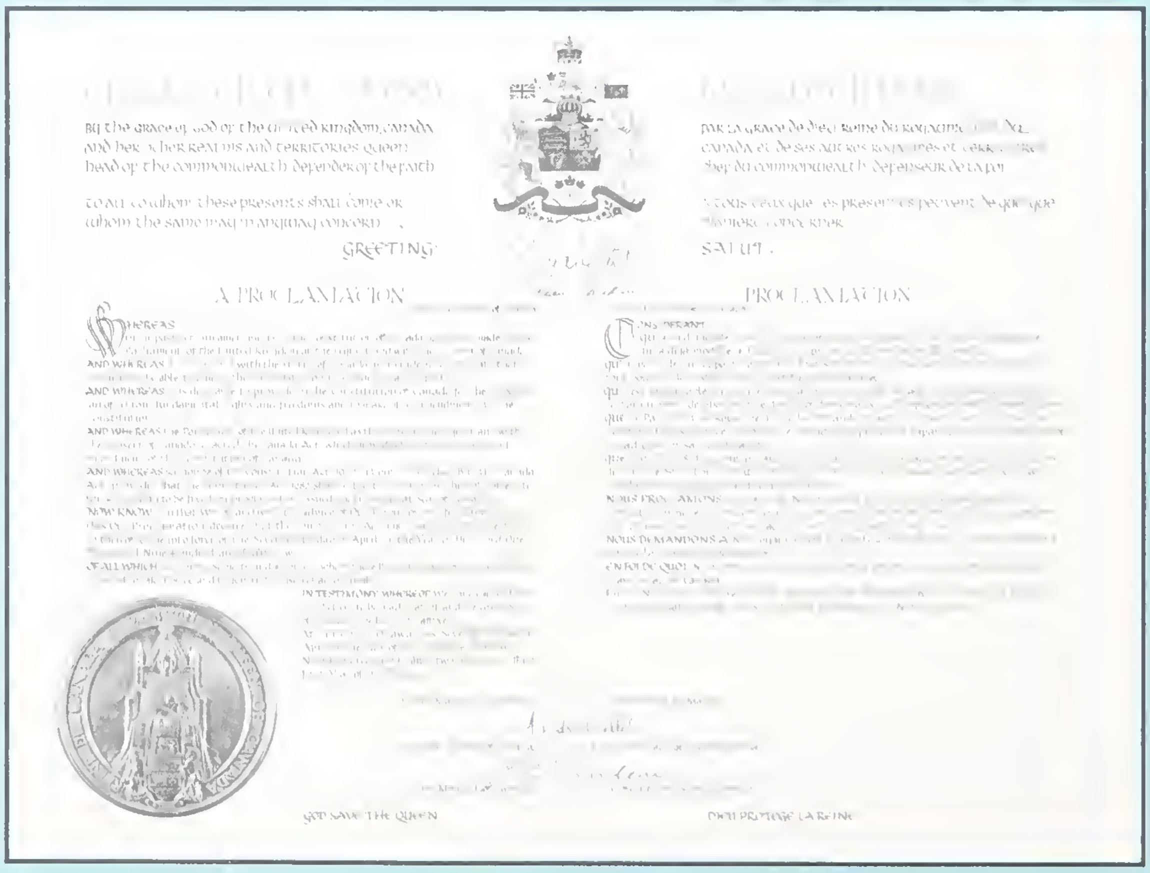
The Canadian Charter of Rights and Freedoms is designed to protect citizens from the state and minorities from parliamentary majorities. Like many of the world's important political and social documents, it is surprisingly short for what it sets out to do.

The Charter is entrenched in the Canadian Constitution, which states that every law that is inconsistent with the Constitution has, to the extent of the inconsistency, no force and effect. It lists fundamental freedoms, democratic rights, mobility rights, legal rights, equality rights, linguistic rights, and sections on enforcement and application of the Charter.

The Supreme Court of Canada declared unanimously in 1984 that the "Charter is part of the constitution of the nation... part of the fabric of Canadian law... the supreme law of Canada."

Prime Minister Pierre Trudeau signed the Charter in 1981, beneath the final paragraph: "We must now establish the basic principles, the basic values and beliefs which hold us together as Canadians so that beyond our regional loyalties there is a way of life and a system of values which make us proud of the country that has given us such freedom and such immeasurable joy."

The Canadian Charter of Rights and Freedoms went into force beginning April 17, 1982.



By the grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith

To all to whom these presents shall come or whom the same may in anyway concern,

GREETING

A PROCLAMATION

SALUT.

PROCLAMATION

GOD SAVE THE QUEEN

DIEU PROTÈGE LA REINE

Charter of Rights and Freedoms.

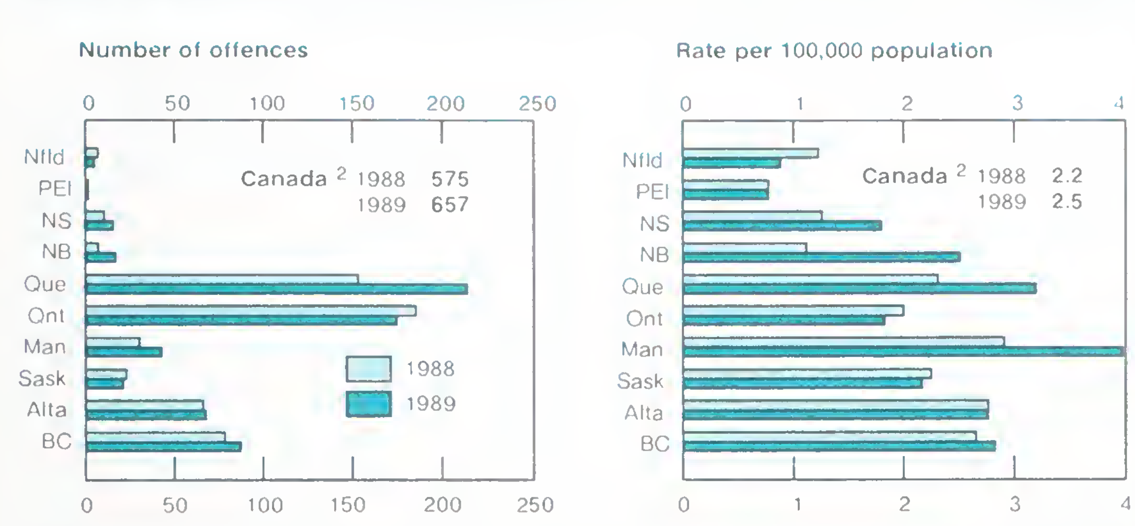
10.4 CRIME AND LAW ENFORCEMENT

CRIME STATISTICS

More than 2.4 million Criminal Code offences were reported to the police in 1989; and the crime rate was 9,274 offences per 100,000 population, an increase of less than 1% from 1988. Although property crimes dropped for the second consecutive year, they still accounted for almost 60% of all Criminal Code offences. The property crimes rate decreased 2% in 1989; break and enters decreased 4%, while fraud and thefts under $1,000 both dropped by 3%. However, increases were reported in thefts of motor vehicles (11%) and thefts over $1,000 (7%).

Chart 10.1

HOMICIDE OFFENCES[1]



[1] One offence is counted for each victim.
[2] Includes Yukon and Northwest Territories.

In 1989, violent crimes accounted for approximately 10% of all Criminal Code offences. The violent crime rate increased for the 12th consecutive year, rising 6% from 1988. Homicides increased by 13%, sexual assaults were up 6%, other assaults increased 6%, and robberies rose 5%. The only violent crimes to register decreases were attempted murders (down 2%) and abductions (down 6%).

In 1989, police were able to solve 75% of all violent crimes and 25% of all property crimes. In 1989, 657 persons were victims of homicide, which includes first degree murder, second degree murder, manslaughter and infanticide. (Historically, the United States has reported a homicide rate generally 3-4 times higher than that of Canada.) In 1989, as is typical, nearly 80% of solved homicides were committed by persons who previously knew the victim; 37% shared a domestic relationship with the victim and 41% were an acquaintance. Only 22% of homicides were committed by strangers, and half of all homicides occurred in the residence of the victim. Shootings accounted for approximately one-third of the homicides in 1989, stabbing for 26%, and beatings for 19%.

"HANDS UP!"

One of Canada's most colourful historical figures was Billy Miner, who became famous robbing the Canadian Pacific Railway's Transcontinental Express. Miner, who was from the United States, was already a seasoned bandit when he made Canada his home in 1904. He is credited with coining the phrase, "Hands up!" and became known for his courtesy and gentleness during a robbery.

The first time Miner robbed the Transcontinental Express, in 1904, he made away with $7,000 in cash and gold. Two years later his next attempt yielded only $15. The CPR, the British Columbia government and the Canadian government, however, combined to offer an $11,500 reward for his arrest. Miner was captured in 1906 by the North West Mounted Police after a massive manhunt, but escaped from prison the next year and eluded the police with the help of local citizens, who had come to appreciate his gentle style. After a series of robberies and escapes in the United States, Miner finally died in a Georgia prison in 1913.

Cocaine offences in 1989 rose by 50%, and now account for one-quarter of all drug offences. The rate of all narcotic and drug offences increased by 13% from 1988. Cannabis offences still accounted for 60% of all narcotic and drug offences in 1989; 10 years ago they represented 90% of all drug offences.

Impaired driving offences in 1989 hit their lowest level since statistics began being collected in 1974. Offences dropped 2% from 1988 to 118,636 persons charged with impaired driving; 181 were charged with impaired driving causing death, and 1,218 with impaired driving causing bodily harm.

Chart 10.2

CRIMINAL CODE OFFENCE RATE, 1990

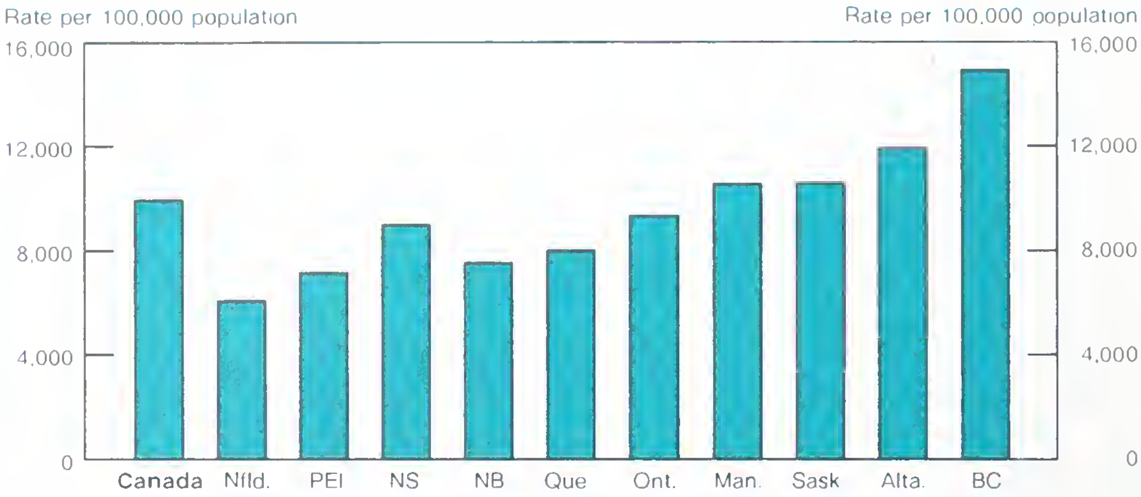
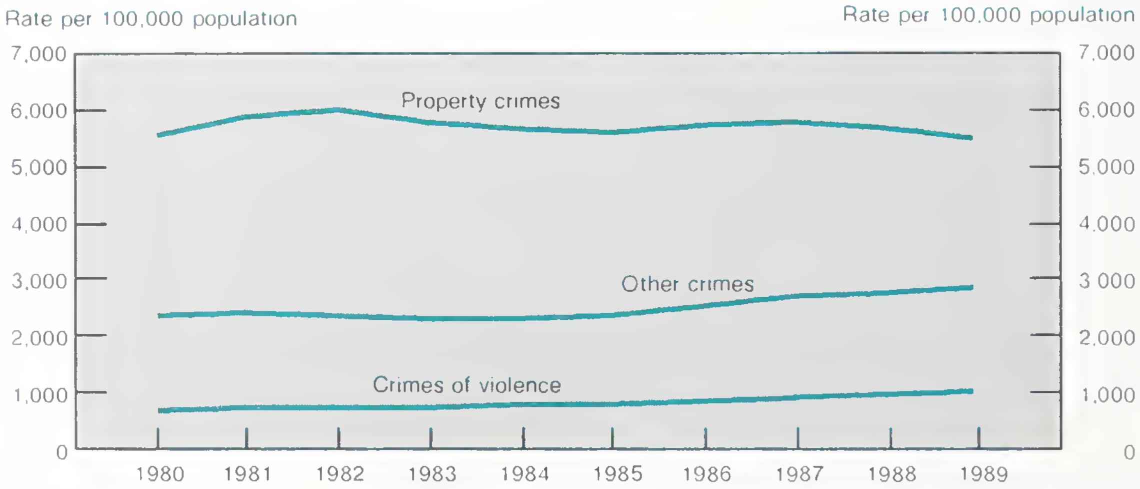


Chart 10.3

CRIMINAL CODE OFFENCE RATE BY CATEGORY, 1980-89



YOUNG OFFENDERS

Youths aged 12 to 17 represented 22% of all persons charged with Criminal Code offences in 1989. In collaboration with provincial and territorial departments responsible for youth courts, the Canadian Centre for Justice Statistics (CCJS) collects information on young persons in Canada's justice system. The Youth Court Survey is conducted in all provinces and territories except Ontario, and generates statistics on the number of charges, cases and persons charged. Some participating jurisdictions may be under-reporting; consequently, data must be considered as indicative rather than definitive.

A total of 57,764 cases were heard in youth courts in 1989-90, with an average number of charges per case of 2.0. More than 80% of the young persons who appeared before youth courts were male, and about 75% were between 15 and 17 years of age. These patterns were consistent

ROYAL CANADIAN MOUNTED POLICE

Canada's first federal police force was created in 1845 to quell mounting unrest among construction workers building the St. Lawrence and Welland Canals.

The Mounted Police Force was designed to be a temporary force, but it lead to a number of off-shoots. These included the Dominion Police and the North West Mounted Police Force, which were united in 1919.

The merger introduced the Royal Canadian Mounted Police (RCMP), which has been Canada's federal police force ever since. Along with 656 officers, the ranks of the new RCMP included 675 horses, 72 dogs and one veterinary surgeon. The bright red uniforms, still worn today, are derived from the traditional British army uniform.

Today, the RCMP provides provincial and municipal policing to all the provinces (except Ontario and Quebec) and territories. Its 700 nationwide detachments employ approximately 20,000 people and its mandate has broadened to include marine and aviation sections. RCMP officers are also present in almost 30 foreign capitals as Canadian liaison officers.

Royal Canadian Mounted Police

North West Mounted Police line up for inspection at Fort Walsh, 1878.

LEGAL AID IN CANADA

In Canada's early years, legal aid was a charity provided by the legal profession, and considered to be a social welfare service. Today, legal aid is part of Canada's justice system, essentially a service for those who are unable to afford to pay for the services of lawyers.

What is now called legal aid may include legal advice, representation in court, representation before tribunals in administrative matters, drawing up documents and negotiating settlements. Services vary in different jurisdictions, particularly in civil cases.

In early years, law societies fostered several legal aid plans, by encouraging lawyers to provide free legal services to people who could not pay, or to reduce their fees to match clients' means. Some provincial governments passed legislation that set up legal aid plans and established payment schemes for lawyers who provided the services.

In 1972, the federal government made agreements with provincial governments to share costs of legal aid in criminal matters, and establish minimum mandatory standards. Before then, legal aid services across the country had varied from excellent to non-existent, depending on the jurisdiction. The agreements made legal aid available for financially eligible persons charged with serious criminal offences, and for appeals to higher courts by the Crown. There is a choice of lawyers in some circumstances. As a result, all provinces and territories now provide legal aid in criminal cases, to eligible persons who might be imprisoned or lose their livelihood if they are convicted.

Since the passage of the ***Young Offenders Act*** *in 1984, legal aid is also provided to all young persons who qualify, under provisions of the federal-provincial legal aid agreements.*

In 1980, under the ***Canada Assistance Plan Act****, federal and provincial governments agreed to share equally the costs for civil legal aid, where social assistance legislation in an individual province supports it. The range of civil matters for which legal aid is provided varies from jurisdiction to jurisdiction.*

Since a Supreme Court of Canada decision in March 1990, all persons who are arrested or detained are advised by the police of duty counsel services and the availability of legal aid. Duty counsel services include advice on legal rights and how to exercise them, and how to find legal services. They also provide on-the-spot representation to those who appear in court without counsel. Duty counsels exist in criminal, family and youth courts, and travel with the court in Yukon and the Northwest Territories.

with those of 1986-87. Sixty-two per cent faced property offences as their most serious charge, and 18% were charged with a violent offence. Young persons charged with other Criminal Code offences accounted for about 10% of the total, Young Offenders Act offences for 6%, and drug-related charges for 4%.

Half of the young offenders in 1989-90 received a term of probation as their most serious penalty; fines were given to 14%, 11% received terms of secure custody, and 10% were granted open custody. Community service orders (as the most serious disposition) were assigned to about 7%, and the remaining 7% received an absolute discharge or another type of disposition. From 1986-87 to 1989-90, the proportion of young offenders given community service orders increased by 15%. Increases also occurred with terms of open custody (10%), secure custody (7%), fines (5%) and absolute discharges (5%). By contrast, there was a relative decline in the proportion of youths receiving probation (3%). Other dispositions remained stable, while detention for treatment continued to be used very rarely. (For more statistics on Young Offenders, see Table 10.3.)

HELPING VICTIMS OF CRIME

In recent years, criminal justice agencies and private sector groups have taken a number of initiatives to aid the victims of crime. Victims' services have been established across the country, and in 1981, a federal-provincial task force examined the needs of crime victims and then considered methods of assistance. One year later, the Solicitor General's department, with the help of Statistics Canada, conducted a victimization survey in seven major urban centres. This

THE LAW REFORM COMMISSION OF CANADA

In Canada, law draws from the legal systems of two founding nations — British common law and French civil law. While these roots very much inform it, Canadian law is nonetheless constantly evolving to meet changing conditions in today's society.

An important organization contributing to this process of evolution is Canada's Law Reform Commission. Created by an Act of Parliament in 1971, the Commission studies and reviews federal laws recommending improvements, modernizations and reforms. Its mandate is to develop new approaches to the law that respond to modern Canadian society, and to reflect in its recommendations the distinctive concepts and institutions of the common law and civil law legal systems in Canada.

By publishing its research findings, the Law Reform Commission of Canada advances legal scholarship, changes attitudes and practices, and indirectly influences administrative and legislative reform. The Commission plays a part in changing laws and educating Canadians on important legal matters, and courts frequently refer to positions adopted by the Commission when making judgements.

The Law Reform Commission's program has four main segments: substantive criminal law, criminal procedure, protection of life and administrative law. It also prepares reports from time to time on small but significant irregularities found in existing statutes.

The Commission's goal is to promote sensible laws that are modern, principled, rational, comprehensive, egalitarian, and that can be understood by ordinary citizens as well as lawyers and judges. It blends pragmatism with idealism, so that law reform is both practical and theoretically sound.

In the area of criminal law, the Commission has proposed an Evidence Code, a new Criminal Code and a first volume of a Code of Criminal Procedure. In addition it explores current issues in society that affect federal laws and has made recommendations about family law, administrative law and environmental law, to name a few.

In addition, an ongoing Protection of Life Project is a major program set up in 1975 to analyze strengths and weaknesses of existing health-related federal law, so that it can be modified to respond to new medical technology and evolving values in society. The project has examined and made recommendations on such medical-legal issues as the legal determination of death, euthanasia, sterilization, behaviour alteration, and the legal status of the foetus, and experimentation on human subjects. Recently-begun studies are looking into new reproductive technologies as well as organ and tissue transplant.

In the late 1980s, Supreme Court of Canada pronouncements on the paramount importance of human rights legislation, prompted more Commission research in that area. There was a need for change in Canadian institutions and laws, since most current legislation was developed before the Canadian Charter of Rights and Freedoms and modern human rights statutes were enacted.

survey provided information about victims of certain crimes, the impact of victimization, the extent and distribution of reported and unreported crime, and public awareness of and participation in crime compensation and crime prevention programs.

Criminal injuries compensation is a recent effort to improve the criminal justice system by compensating innocent victims of crime. From a social security point of view, it is part of a large network of programs to ensure Canadian residents have income security and necessary social services, regardless of socio-economic status. Each province and territory, except Prince Edward Island, has a program to compensate victims for injury or death resulting from specified crimes or from efforts to prevent a crime or to arrest an offender or suspected offender. Criminal injuries compensation legislation came into effect in the late 1960s in Newfoundland, Ontario, Saskatchewan and Alberta, and in the early 1970s in other provinces. The Yukon and Northwest Territories and Nova Scotia have had legislation since the mid-1970s.

Administration of criminal injuries compensation programs varies among jurisdictions. For example, while all programs cover compensation for offences specified in the federal-provincial cost-sharing agreement (such as homicide, assault and robbery), a jurisdiction may also compensate for other offences, such as abduction and impaired or dangerous driving. Compensation may be in lump-sum awards, periodic awards or a combination of both. There are also variations in the maximum amounts payable and as a general rule, no compensation is paid for property damage. In 1973, the federal Department of Justice started sharing the cost of criminal injuries compensation programs.

LAW ENFORCEMENT

Law enforcement in Canada is the responsibility of the federal, provincial and municipal governments. The Royal Canadian Mounted Police (RCMP) is responsible for federal policing, and each province takes care of municipal and provincial policing. Provincial legislation in most provinces requires that cities and towns maintain their own municipal force once they have reached a population of between 1,500 to 10,000.

In 1989, Canada's total police officer strength was 54,233, or 74% of all police personnel. The largest concentration was 37%, or 19,897 police officers, in Ontario. Policing expenditures for the country totalled $4.67 billion.

Federal police The RCMP is responsible for enforcing federal statutes and executive orders in all provinces and territories, and for providing protective services and airport and native policing. Under contract, the RCMP prevents and detects crime and maintains law and order in provinces, territories and municipalities. It also works to improve community relations, to investigate national security offences, and to provide investigative and protective services to federal departments and agencies. On request, it also provides police training, forensic laboratories, and identification services to other Canadian law enforcement agencies.

Provincial police The RCMP provide provincial policing services under contract to all provinces except Quebec and Ontario, and to the two territories. In Newfoundland, provincial policing is shared with the Royal Newfoundland Constabulary; and in Ontario, the Ontario Provincial Police (OPP) enforce the Criminal Code and provincial statutes in areas not required to maintain municipal police departments. The OPP also maintain a traffic patrol on highways and rural areas, enforce the Liquor Licence Act for Ontario, and maintain a criminal investigation branch as well as other branches to help other forces investigate major crimes. The Quebec Provincial Police (QPP) force prevents and investigates criminal offences and violations of provincial law.

Municipal police Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. All villages and townships, or parts of townships, having a population density and real property assessment sufficient to warrant maintenance of a police force are responsible for policing their municipalities. Municipal police enforce the Criminal Code, provincial statutes, and municipal bylaws.

In 1987, there were more than 400 municipalities with independent police forces. Another 191 had services provided through the RCMP under contract. In Ontario, the OPP provides municipal policing services under contract to 13 municipalities.

10.5 CORRECTIONAL SERVICES

The responsibility for adult correctional services is shared by federal and provincial governments. The Criminal Code states that the federal government is responsible for offenders sentenced to custody for two years or more, while provincial governments have authority over persons given a custodial sentence of two years less a day, or placed under other court orders.

Although there is a clear division of responsibility, jurisdictions can enter into exchange-of-service agreements. These are negotiated for purposes of inmate transfers across jurisdictions, parole suspensions and parole supervision, community assessment services, and health, psychiatric and educational services for offenders.

The Prisons and Reformatories Act defines the general administrative structures and responsibilities for operating custodial facilities. Each province or territory, although bound by general guidelines, has instituted its own set of legislative and regulatory guidelines for corrections.

National Archives of Canada/C 11274

"The Law", Alberta, 1913.

I. Dooh/National Film Board/National Archives of Canada/PA 111400

An Ontario Provincial Police officer using a radar speedmeter to track speeding vehicle, 1957.

Royal Canadian Mounted Police

North West Mounted Police, Fort Walsh, 1878.

PRISONS IN CANADA

Canada's first large prison opened in Kingston, Ontario, in 1835.

Before this date, prisoners were usually kept in jails attached to courthouses.

By 1891, Canada's five federal penitentiaries held 1,249 prisoners.

In 1989, some 225 federal correctional institutions housed 27,465 inmates, and employed over 11,000 guards, support staff and administrative personnel.

Correctional Services Canada

Kingston Penitentiary, Kingston, Ontario.

Government spending on adult correctional services increased 4% from 1987 to 1988-89, reaching approximately $1.478 billion, with $714 million spent federally ($74 million in capital expenditures) and $764 million spent provincially. In 1988-89, almost 79% of all corrections expenditures went to custodial services and the operation of Canada's 225 institutions. Ten per cent of the total went to headquarters or regional offices and general administration, 9% went to community supervision services and the remaining 2% was earmarked for federal and provincial parole boards. There were 425 probation and parole offices in Canada as of March 31, 1989.

The National Parole Board is an independent administrative tribunal of the Ministry of the Solicitor General, and is an integral part of the Canadian criminal justice system. Under the federal Parole Act, the National Parole Board is primarily responsible for granting full parole and day parole to both federal and provincial inmates, granting federal inmates temporary absences that cannot be authorized at the institutional level, terminating or revoking day paroles, and revoking parole and mandatory supervision releases.

In 1978, amendments to the Parole Act made it possible for any province to establish its own parole board. Quebec, Ontario and British Columbia have exercised this right, and thus assumed responsibility for granting, refusing and terminating parole for inmates in provincial facilities. New Brunswick also operates a provincial parole board, but only for the release of adult inmates pursuant to a provincial statute. All other provincial inmates remain the responsibility of the National Parole Board; however, provincial inmates must apply for parole under Section 8(1) of the Parole Act, while federal inmates are automatically considered for parole.

CUSTODIAL SERVICES

Although custodial sentences of two years less a day are generally under the authority of provincial government agencies, there are exceptions. For example, federal offenders are normally held in the provincial system for a 30-day period of appeal prior to transfer. Transfer agreements between the federal and provincial or territorial governments may also keep some federal offenders detained in provincial facilities, and vice versa.

The degree to which provincial governments share responsibility for temporary detainment also varies. Some provinces assume no responsibility, some claim partial responsibility, and others accept total responsibility.

The provision of custodial services through the private sector can also differ. In most jurisdictions, sentenced inmates are transferred from a secure custodial environment to private facilities, which usually allow for regular access to community resources. In recent years, some private facilities have been integrated into the government network with a resultant impact on average inmate counts. In 1988-89, there were 106,056 offenders in the Canadian corrections caseload, an increase of 1% from the previous year. The majority (74%) were under some form of community supervision, while 26% were held in custody.

NON-CUSTODIAL SERVICES

The need to develop more community correctional services has become increasingly clear in recent years, particularly in light of the high cost and questionable benefit of custodial services to certain offender groups.

Probation is the primary community-based alternative to incarceration, but in recent years other non-custodial correctional programs have emerged. Some of these are available as conditions of probation orders.

Programs aimed at target groups such as women, natives, and impaired driving offenders have grown in recent years. Compensatory sentences, community service orders, fine options and restitution have also increased. The involvement of probation and parole officers in supervising temporary absence cases varies by province; as a result, reported caseloads are not definitive counts of community supervision. Due to increasing community supervision in caseloads, volunteer programs have been established in most jurisdictions. Combined with the fact that probation officers supervise juveniles in some provinces, it is difficult to arrive at an accurate and comparable measure of officer caseload. (For more information about corrections caseloads and caseload characteristics, refer to Tables 10.4 and 10.5.)

Source
Statistics Canada.

FOR FURTHER READING
Selected publications from Statistics Canada

- *Canadian Crime Statistics,* annual. 85-205
- *Adult Correctional Services in Canada,* annual 85-211
- *Juristat Bulletin.* 85-002 (Each issue of Juristat provides detailed data, information and analysis covering a different aspect of the justice system in Canada.)

TABLES

LEGEND

..	*not available*
...	*not appropriate or not applicable*
—	*nil or zero*
--	*too small to be expressed*
e	*estimate*
p	*preliminary*
r	*revised*

(Certain tables may not add due to rounding.)

10.1 JUDGES OF THE SUPREME COURT, FEDERAL COURT AND TAX COURT OF CANADA

Supreme Court of Canada	Federal Court of Canada	Tax Court of Canada
Chief Justice	Chief Justice Vacant The Associate Chief Justice	Chief Judge
The Rt. Hon. Antonio Lamer, PC - appointed July 1, 1990		The Hon. J.-C. Couture
	The Hon. J.A. Jerome, PC	
		Associate Chief Judge
Puisne judges	Court of Appeal	
		The Hon. D.H. Christie
The Hon. Mr. Justice Gérard V. La Forest - appointed January 16, 1985	The Hon. Louis Pratte	
	The Hon. Darrel V. Heald	Judges of the Court
	The Hon. Patrick M. Mahoney, PC	
The Hon. Madame Justice Claire L'Heureux-Dubé - appointed April 15, 1987	The Hon. Louis Marceau	Judge D.W. Beaubier
	The Hon. James K. Hugessen	Judge M.J. Bonner
	The Hon. Arthur J. Stone	Judge J.A. Brulé
The Hon. Mr. Justice John Sopinka - appointed May 24, 1988	The Hon. Mark R. MacGuigan, PC	Judge P.R. Dussault
	The Hon. Alice Desjardins	Judge A. Garon
	The Hon. Robert Décary	Judge J.B. Goetz[1]
The Hon. Mr. Justice Charles Doherty Gonthier - appointed February 1, 1989	The Hon. Allen M. Linden	Judge D. Hamlyn
		Judge W. Kempo
	Trial Division	Judge L. Lamarre Proulx
The Hon. Mr. Justice Peter deCarteret Cory - appointed February 1, 1989		Judge T.E. Margeson
	The Hon. Frank U. Collier[1]	Judge M.A. Mogan
	The Hon. George A. Addy[1]	Judge G.J. Rip
The Hon. Madame Justice Beverley McLachlin - appointed March 30, 1989	The Hon. Jean-Eudes Dube, PC	Judge A.A. Sarchuk
	The Hon. Paul U.C. Rouleau	Judge R. St-Onge[1]
	The Hon. Francis C. Muldoon	Judge R. Sobier
The Hon. Mr. Justice William Stevenson - appointed October 2, 1990	The Hon. Barry L. Strayer	Judge D.E. Taylor
	The Hon. Barbara J. Reed	Judge G. Teskey
	The Hon. Pierre Denault	Judge G. Tremblay
The Hon. Mr. Justice Frank Iacobucci - appointed January 7, 1991	The Hon. Yvon Pinard, PC	
	The Hon. L. Marcel Joyal	
	The Hon. Bud Cullen, PC	
	The Hon. Leonard A. Martin	
	The Hon. Max M. Teitelbaum	
	The Hon. W. Andrew MacKay	

[1] *Supernumerary.*

10.2 ACTUAL OFFENCES BY TYPE,[1] 1985-89

Type of offence	1985	1986	1987r	1988	1989	Percentage change 1985-89
Violent offences[2]						
Homicide	704	569	642	575	657	−6.7
Attempted murder	862	880	916	832	829	−3.8
Sexual assault	18,248	20,530	22,369	24,871	26,868	47.2
Other assault	143,127	155,775	169,325	177,848	190,364	33.0
Other sexual offences	3,219	3,003	2,639	3,148	3,562	10.7
Abduction	910	892	967	1,059	1,003	10.2
Robbery	22,752	23,268	22,523	24,168	25,709	13.0
Violent offences - total	189,822	204,917	219,381	232,501	248,992	31.2
Property offences						
Breaking and entering	356,744	365,140	364,144	359,073	349,164	−2.1
Theft - motor vehicle	82,250	85,585	87,061	89,440	100,336	22.0
Theft over $1,000[3]	308,969	68,024	71,608	80,053	86,908	
Theft under $1,000[3]	512,928	773,257	792,623	776,397	758,935	
Have stolen goods	24,686	25,985	27,013	27,500	27,666	12.1
Frauds	123,140	130,559	126,142	124,632	122,739	−0.3
Property offences - total	1,408,717	1,448,550	1,468,591	1,457,095	1,445,748	2.6
Other criminal code offences	575,636	624,282	680,984	700,565	736,688	28.0
Total criminal code offences	2,174,175	2,277,749	2,368,956	2,390,161	2,431,428	11.8
Federal statute offences						
Drug offences	57,205	56,251	61,658	59,466	67,882	18.7
Other federal statutes	38,915	40,251	40,344	37,041	40,373	3.7
Total federal statutes	96,120	96,502	102,002	96,507	108,255	12.6
Total provincial statutes	359,559	381,354	380,692	367,848	361,467	0.5
Total municipal bylaws	94,454	102,600	109,258	101,561	98,973	4.8
Total offences	2,724,308	2,858,205	2,960,908	2,956,077	3,000,123	10.1

[1] *Based on uniform crime reporting.*

[2] *Updates to the homicide data occur within the homicide project but are not conducted in the uniform crime reporting project, therefore, totals for homicide may vary between these two projects Homicide includes murder, manslaughter and infanticide.*

[3] *Theft categories were increased from $200 to $1,000 in December 1985, therefore, percentage change 1985-89 is not applicable.*

10.3 YOUNG PERSONS APPEARING IN YOUTH COURTS[1] FOR FEDERAL STATUTE CHARGES, BY MOST SERIOUS DECISIONS[2] AND MOST SERIOUS CHARGE[3], 1986-87 TO 1989-90

Most serious charge	Year	Most serious decision										
		Total young persons	Transfer to adult court		Guilty		Not guilty/dismissed		Stay of proceedings/ withdrawn		Other[4]	
		No.	No.	%	No.	%	No.	%	No.	%	No.	%
Violent	1986-87	5,259	35	0.7	4,135	78.6	337	6.4	746	14.2	6	0.1
	1987-88	5,307	24	0.5	4,261	80.3	305	5.7	708	13.3	9	0.2
	1988-89	5,761	19	0.3	4,609	80.0	427	7.4	694	12.0	12	0.2
	1989-90	6,614	20	0.3	5,340	80.7	409	6.2	841	12.7	4	..
Property	1986-87	24,021	33	0.1	19,954	83.1	887	3.7	3,113	13.0	34	0.1
	1987-88	22,557	38	0.2	18,567	82.3	853	3.8	3,077	13.6	22	0.1
	1988-89	21,891	20	0.1	17,774	81.2	826	3.8	3,214	14.7	57	0.3
	1989-90	22,918	7	..	18,194	79.4	943	4.1	3,750	16.4	24	..
Other criminal code	1986-87	3,426	5	0.1	2,696	78.7	205	6.0	515	15.0	5	0.1
	1987-88	3,749	4	0.1	2,962	79.0	170	4.5	604	16.1	9	0.2
	1988-89	3,539	6	0.2	2,827	79.9	163	4.6	530	15.0	13	0.4
	1989-90	3,747	—	—	2,960	79.0	198	5.3	586	15.6	3	..
Drug related	1986-87	1,886	3	0.2	1,596	84.6	61	3.2	224	11.9	2	0.1
	1987-88	1,691	—	—	1,446	85.5	36	2.1	203	12.0	6	0.4
	1988-89	1,540	1	0.1	1,319	85.6	47	3.1	172	11.2	1	0.1
	1989-90	1,383	—	—	1,194	86.3	38	2.7	149	10.8	2	..
YOA[5]	1986-87	378	1	0.3	261	69.0	11	2.9	105	27.8	—	—
	1987-88	1,919	—	—	1,295	67.5	50	2.6	569	29.7	5	0.3
	1988-89	1,973	3	0.2	1,386	70.2	47	2.4	525	26.6	12	0.6
	1989-90	2,252	—	—	1,472	65.4	60	2.7	719	31.9	1	..
Other	1986-87	203	—	—	185	91.1	6	3.0	12	5.9	—	—
	1987-88	248	—	—	226	91.1	5	2.0	17	6.9	—	—
	1988-89	390	1	0.3	313	80.3	24	6.2	52	13.3	—	—
	1989-90	198	—	—	168	84.8	9	4.5	21	10.6	—	—
Total	1986-87	35,173	77	0.2	28,827	82.0	1,507	4.3	4,715	13.4	47	0.1
	1987-88	35,471	66	0.2	28,757	81.1	1,419	4.0	5,178	14.6	51	0.1
	1988-89	35,094	50	0.1	28,228	80.4	1,534	4.4	5,187	14.8	95	0.3
	1989-90	37,112	27	0.1	29,328	79.0	1,657	4.5	6,066	16.3	34	—

[1] *Excludes Ontario for all years and the Northwest Territories from 1986-87 to 1988-89.*

[2] *Refers to the most significant decision rendered during the fiscal year. Decisions are ordered from most to least serious as follows: transfer to adult court; guilty; other decision (e.g. not fit to stand trial): stay of proceedings, charges withdrawn, or transfer to other jurisdiction; not guilty or charges dismissed.*

[3] *Refers to the most significant charge, that is, the most serious from the perspective of the final outcome the case upon adjudication or disposition. Where a person has only one charge, it is defined as the most significant. Where more than one charge is linked to a person, two criteria are used to select one charge as the most significant: (1) decision of the court; and (2) the nature of the offence.*

[4] *Includes those transferred to other jurisdictions and all other types of decisions.*

[5] *Young Offenders Act (YOA).*

10.4 AVERAGE OFFENDER CASELOAD IN CANADIAN CORRECTIONS[1], 1985-86 TO 1988-89

Average actual caseload	Year	Provincial corrections	Federal corrections	Canada total
Custodial[2]	1985-86	15,787	11,214	27,001
	1986-87	16,077	11,106	27,183
	1987-88	16,436	10,557	26,993
	1988-89	18,124	11,030	29,154
Non-custodial[3]	1985-86	74,926	8,465	83,391
	1986-87	69,755	8,962	78,717
	1987-88	68,884	8,713	77,597
	1988-89	70,284	8,941	79,225
Total	1985-86	90,713	19,677	110,390
	1986-87	85,832	20,068	105,900
	1987-88	85,320	19,270	104,590
	1988-89	88,408	19,971	108,379

[1] *Includes the offender caseload handled by both the federal and provincial governments combined but excludes offenders in municipally operated corrections*

[2] *Refers to actual count and therefore excludes inmates temporarily not in custody at the time of count. In 1986-87 approximately 3,525 provincial and 1,544 federal inmates fell into this category*

[3] *Figures for the federal non-custodial population include full parole, day parole and mandatory supervision counts.*

10.5 CASELOAD CHARACTERISTICS, PROVINCIAL AND FEDERAL CORRECTIONS, FISCAL YEAR 1988-89

Jurisdiction	Sentenced admissions				
	Total number	Female %	Male %	Median age[1]	Median sentence
Provincial corrections					
Custodial	116,092	7	93	27 yrs	30 days
Probation	53,823	17	83	26 yrs	12 months
Federal corrections[2]	4,011	3	97	30 yrs	46.9 months
Canadian adult population[3]	19,337,800	51	49	40 yrs	

[1] *The age reported here for federal corrections is "mean age".*

[2] *Excludes releases to parole and mandatory supervision*

[3] *Based on postcensal estimates in June 1988.*

Source

Statistics Canada.

National Film Board/National Archives of Canada/PA 112902

Chapter 11

COMMUNICATIONS

11.1 INTRODUCTION

OVER THE LAST CENTURY, the lives of Canadians have been shaped and reshaped by the remarkable progress of communications technology. Work, leisure, education, health care and social services have all been influenced by the communications revolution.

In fact, communications has become key to Canada's economic and social well-being, increasing the productivity of Canadian industries facing intense international competition. New applications of combined computer and communications technologies are creating new jobs in information-related fields, and through national communications networks, the provinces and regions are sharing ideas on solving common problems, and on how best to choose directions for the future.

As communications technology develops, Canadians have ever increasing communications choices. Recent advances have changed the ways we use postal services, newspapers and magazines, telephones, radio and television.

In the 1990s, Canada's strength as a world leader in telecommunications will provide a solid basis for realizing countless applications of innovative technologies. At the same time, the country's highly developed telecommunications system, its "electronic highway", allows Canadian industry to incorporate new technologies as they become available.

Canadian Tribune Publishing Company/National Archives of Canada/PA 93602

Hot off the presses.

11.2 TRADITIONAL SYSTEMS

POSTAL SERVICE

In 1851, postal services in Nova Scotia, New Brunswick and the Province of Canada were transferred from the British Crown to provincial deputies. A few months after Confederation in 1867, the Post Office became a federal department.

Over the past century, Canada's postal system has developed along with innovations in transportation. In 1885, the newly completed Canadian Pacific Railway delivered mail from the East Coast of the country to the West Coast. Airmail was introduced in 1918. Thirty years later, Canada became the first country to transport domestic first-class mail by air. In 1971, this policy was extended to overseas mail. In the same year, the introduction of the postal code system paved the way for mechanized mail sorting.

The 1980s brought important changes to Canada's postal service. In 1981, faced with increasing competition from the private sector, the federal government turned the Post Office into a Crown corporation — the Canada Post Corporation. Canada Post has made mail delivery faster and more reliable, and has introduced new products and services for a rapidly changing marketplace.

In the 1989-90 fiscal year, Canada Post delivered 9.1 billion pieces of mail, a 38% increase from the start of the decade. In 1988-89, the Corporation's net income was $149 million. The previous year had seen the first postal service profit in 30 years.

HISTORY OF CANADA'S POSTAL SYSTEM

Communications in Canada have been a challenge since early times, and the postal system has often used new technology to conquer vast distances, difficult terrain and climate.

The first recorded mail delivery in what is now Canada was in 1693, when a Portuguese citizen, Pedro da Silva, was hired to carry letters between Montreal and Quebec City for 20 sous, or about 10 cents each.

The first post office opened in Halifax in 1754. A decade later, the postal systems of all British colonies were merged at the end of territorial wars between the English and French.

When American colonies declared independence, British colonies began to resemble present-day Canada. By the 1820s, when the Lachine Canal was finished, Canadian steamboats were carrying mail between Montreal and ports on Lake Ontario. In 1851, Canadian colonies took control of their own postal system, issuing the first Canadian postage stamps. By 1856, Canadian mail steamer service was improved to carry mail between England and Quebec, proving so efficient that the United States used the Canadian route to move mail to and from Europe.

By this time also, Canada's post office had set up North America's first railway mail sorting system. Mail cars on steam trains, staffed by elite clerks who sorted on the move, cut delivery between Quebec City and Windsor from 10 days to two.

By the 1880s, the efficient mail cars had all but replaced picturesque but slower delivery means, like dogsleds, snowshoes and horses. The Railway Post Office disbanded only in 1971.

The Post Office also began experimenting with Royal Flying Corps airplanes and pilots early in the history of flight. The first Canadian airmail flew from Montreal to Toronto on June 24, 1918. By 1948, Canada was the first country in the world to ship first class mail by air where practical, calling it "All-up Service".

The end of World War II was the beginning of the information age, and mail volume burgeoned, rising from about 2 billion pieces a year in 1945, to 9.1 billion in 1990.

Although the Post Office had recorded regular surpluses in the first half of the century, increasing annual deficits began to pile up, as competition with the private sector increased. By 1982, the deficit had reached $600 million a year. A turnaround followed the establishment of the Post Office as a Crown corporation. By 1988-89, Canada Post had returned to profitability for the first time in 30 years. It now pays a dividend to its major shareholder, the Government of Canada.

Post Office Dept./National Archives of Canada/PA-59922

Motorcycle collection of mail, corner of Metcalfe and Laurier, Ottawa, Ontario, 1923.

Post Office Dept./National Archives of Canada/PA-61541

Stamp press, Canadian Bank Note Company, 1923.

With the country's third-largest corporate workforce (about 60,000 full- and part-time employees), Canada Post is the largest service corporation in the country. To move the mail, the Corporation uses 29 major mechanized mail processing plants and a fleet of 5,700 vehicles. Its products and services are sold at over 16,700 outlets, more than 68% of which are privately operated. Many of these post offices also distribute government forms such as income tax returns and applications for family allowances, old-age security pensions and passports.

Canada Post's recent innovations include bar-code technology that tracks the movement of mail, and electronic mail — a marriage of telecommunications and traditional mail delivery.

Canadian stamps, such as the *Masterpieces of Canadian Art* series, have won international acclaim while promoting awareness of Canada's culture and heritage.

ROYAL MAIL
G R
CANADA

Dept. of the Interior/National Archives of Canada/C-6548

Postmaster Hargreaves and other officials with Fokker F XIV aircraft CF-AIL of Western Canada Airways making inaugural flight of the Prairie Air Mail Service, Calgary, Alberta, 1930.

Canada Post also continues to adapt new technology to move information. It now has the capability to deliver electronic mail to the far points of the earth in minutes, and conventional mail is moved by high-speed mechanical and electronic systems.

Mail can be delivered between major cities in four days or less, depending on distance. Electronic mail services include Telepost, Intelpost, Envoypost and Volume Electronic Mail. Priority Courier and Special Letters are specialized fast document delivery services.

CANADA
13
13
CANADA
3
CENTS
3
CANADA
5
CENTS
5
CANADA
6
6
OTTAWA CONFERENCE
AIR
CENTS

National Archives of Canada/PA 110513

Set of new stamps commemorating Imperial Economic Conference, Ottawa, Ontario, 1932.

NEWSPAPERS

In 1988, Canada had 107 daily newspapers with a combined daily circulation of 6.0 million, up from 5.7 million in 1986. Of these papers, 11 were published in French and 96 in English.

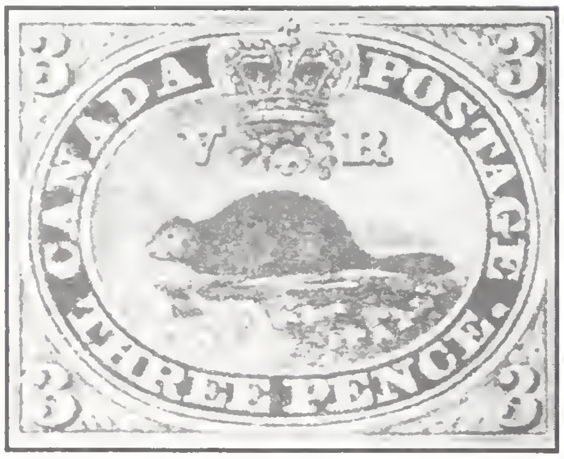
Canada's non-daily newspapers also gained in circulation. Non-dailies include community newspapers, specialized newspapers, armed forces newspapers, supplements, ethnic non-dailies and "shoppers" (free-distribution papers consisting almost entirely of advertising). Total circulation increased from 16.3 million in 1986 to 19.7 million in 1988. Compared to 1987, the number of non-daily newspapers increased 10% to 1,425, and average circulation increased from 12,552 to 13,838.

THE "PENNY" POST

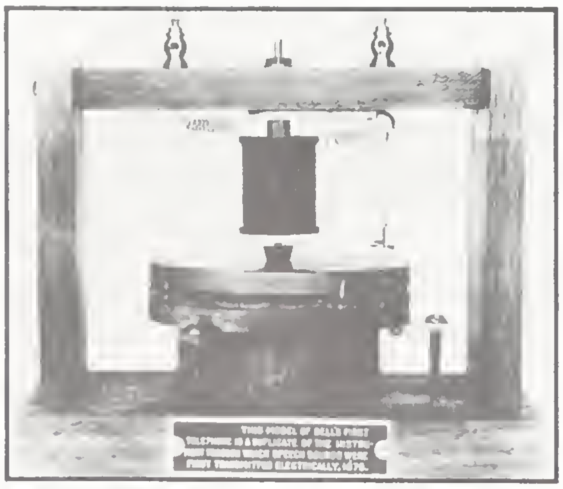
Canada first used postage stamps in 1851, some 11 years after they were introduced in England.

Called prepaid penny-post, the cost of a letter was determined by its number of pages and the distance it had to be sent. Sending the letter initially cost nothing. However, the person who received it had to pay depending on how far it had come and how thick it was.

Postage rates were high. They could run the equivalent of two or three days of a labourer's wages and many people relied on arriving immigrants to bring letters from home countries. The method of sending letters "collect" was in effect until 1875.



Canadian Postal Archives/National Archives of Canada/POS-1388



Telephone Historical Collection, Bell Canada

The "Gallows Frame", Alexander Graham Bell's first telephone transmitter, circa 1875.

In 1988, Canada's 1,207 community papers had a combined circulation of 16.4 million, with an average circulation of 13,582. The 66 "shoppers" in Canada had a combined distribution of 2.3 million and an average circulation of 34,712 — more than twice the average for community papers.

As well as using their own news-gathering staff and facilities, Canadian newspapers subscribe to a number of **syndicates and news services**. The largest Canadian news service is The Canadian Press (CP), a co-operative agency jointly owned by the majority of Canadian dailies. CP delivers Canadian and world news in English and French to more than 100 member newspapers via satellite. Subscribers to the CP LaserPhoto service also receive more than 600 photos a week. A CP affiliate, Broadcast News Ltd., distributes print and audio news by satellite to hundreds of radio and television stations. Another CP subsidiary, Press News Ltd., distributes news services to the Canadian Broadcasting Corporation (CBC), weekly newspapers, magazines and corporate and government clients.

CP has news-gathering staff in 13 Canadian cities as well as in Washington, London and Moscow. Member newspapers provide local news and photographs that can be used by other members. CP's international report includes material from The Associated Press, Reuters, and Agence France-Presse.

PERIODICALS

In 1988-89, there were 1,534 Canadian periodicals of general, special or scholarly interest. General interest consumer periodicals accounted for 59% of total circulation, special interest periodicals for 40%, and scholarly periodicals for the remaining 1%. Nearly 1,100 publishers produced these periodicals, with 162 publishing more than one.

With an annual circulation of almost 558 million in 1988-89, Canadian periodicals had estimated revenues of $867 million, up 12% from the previous year. Advertising sales generated 63% of this total, followed by subscription sales with 23%. Single-copy sales generated 7%, while the remaining 7% came from other sources such as grants, donations and membership fees.

CULTURAL PUBLICATIONS

Canadian publications are important contributors to our cultural and national identity. Since 1969, publishers have been required by law to deposit two copies of every Canadian publication in the National Library. In 1973, the National Library also began collecting all serial publications produced by Canada's ethnic communities. This collection comprises about 1,800 titles, and is the largest in Canada. It preserves material that would otherwise be lost or difficult to obtain. The Library makes the material available to researchers through a reference and consulting service and through online computer access.

11.3 TELEPHONES TO TELECOMMUNICATIONS

Telecommunications has grown from nineteenth century beginnings in the first telegraph and voice transmissions to a vast and complex industry. In 1986, communications contributed 2.8% ($10.3 billion) of Canada's Gross Domestic Product.

On a per capita basis, Canada has the most extensive telecommunications system in the world. In 1986, over 98% of Canadian homes had telephones. The assets of the telephone industry in 1986 were more than $23 billion, while operating revenues were $11 billion.

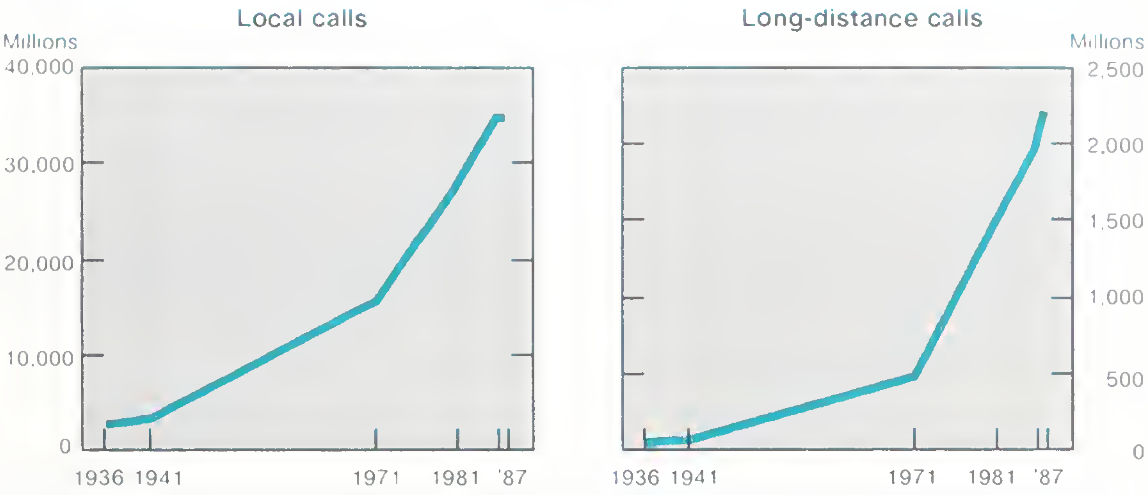
THE TELECOMMUNICATIONS SYSTEM

The Canadian telecommunications system comprises private and public components operating under federal and provincial jurisdictions. The system includes nine major and many small telephone companies; a domestic satellite service; an overseas service; and hundreds of cable television companies. Improvements and new services are frequently introduced into a highly competitive market. Generally, local calling and public long-distance services are now the only protected monopolies.

Regulatory power over the Canadian telecommunications industry is split between the federal and provincial governments. Federal regulatory control is vested in the Canadian Radio-television and Telecommunications Commission (CRTC), which ensures that rates charged for telecommunications services are fair. In recent years, technological and economic pressures have forced the CRTC and the federal government to deregulate many segments of the industry, such as the manufacture of telephone sets and computer terminals. In partnership with provincial governments, the CRTC is studying the implications of introducing competition in long-distance telephone service.

Chart 11.1

TELEPHONE USE IN CANADA, SELECTED YEARS



TELECOMMUNICATIONS CARRIERS

Telecommunications carriers now offer much more than telephone voice transmissions: new data and video services employ digital communications, high-tech cables and satellite transmission.

Telephone services in Canada are provided by seven privately-owned telephone companies, and provincially-owned companies in Saskatchewan and Manitoba. These companies, along with Canada's satellite communications company, comprise Telecom Canada, a consortium linking Canada's regional networks.

Canada's other major carrier is Unitel, formed by a merger of CNCP Telecommunications and Rogers Cablevision. Unitel competes with Telecom Canada in every area except public telephone services. Teleglobe Canada, established as a Crown corporation but privatized in 1988, is the country's international carrier, connecting domestic and overseas networks.

11.4 BROADCASTING

THE EVOLUTION OF PRIVATE AND PUBLIC BROADCASTING

Since the first Canadian radio broadcast in 1919, Canada's broadcasting system has evolved to meet the needs of a multicultural, widely dispersed population.

Almost from the beginning, Canadian broadcasting has had both private and public involvement. Publicly-owned Canadian National Railways began radio service in 1923. In 1929, a federal Royal Commission on Broadcasting recommended that a national public broadcasting system be created to counter the effects of US radio and to serve areas where commercial radio was not economical. The Canadian Broadcasting Corporation (CBC) was created in 1936 with a dual mandate: to provide a national radio service, and to regulate all broadcasting in Canada.

Debate over the proper roles of private and public broadcasting in Canada has a long history. In 1958, the Board of Broadcast Governors was assigned the responsibility, previously delegated to the CBC, of supervising public broadcasting. The Board was succeeded by the CRTC, which became responsible for all broadcasting regulation under the 1968 Broadcasting Act. This Act also required the CBC to offer a balance of information, enlightenment and entertainment; to

THE MAIL IS COMING THROUGH

During the first years of Confederation, mail was delivered via any mode of transportation that could get it to its destination. It travelled by train, steamboat, stage, horse-drawn sleighs, dog-sleighs, wagons, and on horseback and snowshoes.

Weather, particularly in the winter months, had a major impact on delivery time. The origin and destination of a letter also determined how long it took to deliver. A letter sent from one big city to another often travelled by train or steamboat and took four to 10 days to reach its destination. Settlers in remote areas could expect to wait several weeks before letters reached them.

The jet revolutionized transportation; and today, Canada Post can guarantee delivery anywhere in Canada within 24 to 48 hours.

Post Office Dept./National Archives of Canada/PA 59980

The mail comes through. . . Mackenzie River, 1923.

CANADA'S FIRST NEWSPAPER

The first edition of Canada's earliest newspaper was a modest affair; half a sheet of foolscap with two columns of print on both sides of it.

Released on March 23, 1752 under the banner, the *Halifax Gazette*, about one-quarter of the newspaper was devoted to local Nova Scotia news such as ship arrivals and proclamations. The rest of the paper contained excerpts from British newspapers, including articles on European politics and government, and news from the American and West Indian colonies.

Gilbert Bagnani/National Archives of Canada/PA-118776

Office of "The Leader", Regina's weekly newspaper in 1885.

extend its coverage to all parts of Canada as public funds become available; to broadcast in English and in French, (thus serving the special needs of certain regions and contributing to the exchange of cultural and regional information and entertainment); and to help develop national unity by providing a continuing expression of Canadian identity.

RADIO BROADCASTING

Canada can claim the first scheduled radio broadcast in North America — a musical program on May 20, 1920 on XWA in Montreal. This station, established by Guglielmo Marconi, began experimental broadcasting in 1919; it was likely the first radio station in North America. It later changed its call letters to CFCF.

By 1985, Canada had 465 privately-owned radio stations. In 1988-89, CBC radio, in English or French, was available to over 99% of Canadians. To provide this service, the CBC owned and operated 65 radio stations, plus 554 rebroadcasters and low-power relay transmitters. CBC programming was also carried by 15 private affiliate radio stations and 46 private or community-owned rebroadcast transmitters.

The CBC and private radio stations offer a wide range of programming on AM and FM frequencies. Some private radio stations feature a particular musical style, such as rock and roll, country and western, or easy listening. Others focus on news programming. CBC radio offers popular and classical music, serious drama and light comedy, talk shows, analyses of politics and the arts, local news, current affairs, weather and traffic reports, and regional and network programming.

TELEVISION BROADCASTING

Television broadcasting made its Canadian debut in 1952, from CBC stations in Toronto and Montreal. In 1958, Canada's first coast-to-coast live television broadcast was made using the CBC's newly completed microwave network, stretching from Nova Scotia to British Columbia. Canada's first private television network, CTV, began broadcasting in 1961.

Cable technology, which distributes reliable signals over copper or fibre-optic cables, and satellite transmission have together paved the way for an ever increasing variety in programming. In 1990, Canada's 1,400 licensed cable operators provided up to 60 channels, and some were preparing to expand to as many as 80 channels. Of the 88% of Canadian homes with access to cable services, four out of five are subscribers. Along with public and private network programming from Canada and the United States, Canadian cable subscribers can also receive special channels offering in-depth news and weather, parliamentary coverage, university credit courses, multicultural programming, captions or sign-language for the hearing-impaired, community programming and shopping information.

The Gazette, Montreal/National Archives of Canada/PA-77936

CBFT Television officially begins, September, 1952.

In 1989-90, the CBC operated several national services: a French television network, an English television network, the world's first national parliamentary network and Newsworld, an English-language news and information specialty service. The English and French CBC television services, available to over 99% of Canadians, present Canadian-produced news, current affairs, drama, sports, religion, science, children's programs, consumer information and light entertainment. In 1989, the CBC owned and operated 31 television stations, 598 television network relays and broadcast transmitters and 96 CBC-fed community rebroadcasters. CBC television programming was also carried by 28 affiliated stations and 239 private or community-owned rebroadcast transmitters.

In addition to private stations affiliated with the CBC, Canada's non-public television includes the Canada-wide CTV English-language network; Global Television, based in Ontario; Le Réseau de Télévision Quatre Saisons, based in Quebec; the TVA network, with originating stations and several rebroadcast facilities in Quebec and one facility in the Atlantic provinces; the Atlantic Satellite Network, a regional satellite-to-cable service; and a number of independent stations generally located in large cities. Several independent stations broadcast in languages of Canada's ethnic minorities.

There are four provincial educational television networks: Radio-Québec, TVOntario, Access Alberta and British Columbia's Knowledge Network . TVOntario began a French-language network in 1987.

Discretionary or "Pay-TV" services were first licensed by the CRTC in 1982; by 1986, over 90% of Canadian cable subscribers had the option of paying additional monthly fees for these services.

BROADCASTING REVENUES

The CBC is the major broadcaster in Canada. In 1988-89, the CBC's budget was $1.2 billion. The Corporation's parliamentary appropriation was $810.4 million, up almost 2.3% over the previous year. The rest of the budget was covered by advertising (about $329 million) and other revenues.

By 1986, private radio revenues had climbed to over $623 million, up from $579 million in 1985 and almost $559 million in 1984. Profits before taxes were $25 million. For private television, profits before taxes were $167 million in 1984, $182 million in 1985 and $184 million in 1986. Private television profits are higher than private radio profits, partly because national television commercials generate higher revenues than local radio advertising. Private radio stations also employ more people and pay out more wages.

11.5 THE TECHNOLOGY

TERRESTRIAL SYSTEMS

The backbone of Canada's telecommunications network is formed by three nation-spanning microwave networks. Two of these are owned by Telecom Canada; the third is owned by Unitel. These networks consist of microwave stations spaced about 50 kilometres apart; the stations relay signals, amplifying them to compensate for normal signal loss. In general, a single microwave channel can carry one television signal or more than 1,200 telegraph, data or telephone signals.

New technologies are gradually transforming Canada's telecommunications infrastructure. Canada has been a leader in replacing analogue technology, which creates signals that travel in continuous waves, with digital equipment, which transmits signals in discrete pulses. Because the digital mode uses computer language, it is able to carry more information and is less susceptible to interference. The combination of digital and computer technologies has opened the way to vast interconnectable communications networks and myriad new applications.

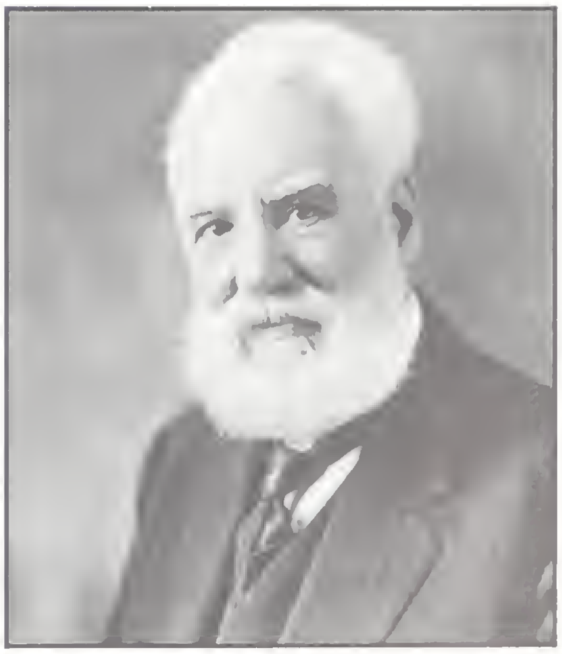
With many of Canada's carrier networks, especially where traffic is heaviest, new fibre-optic cables are replacing traditional copper cables; the fibre-optics cables carry more information faster and with less signal loss. Fibre-optic cables are also better adapted to certain applications, such as underwater lines, because of their high capacity at low cable diameters. Both Telecom Canada and Unitel are in the process of laying fibre-optic trunk lines to supplement microwave networks. Teleglobe Canada is a major partner in TAT-9, the large-capacity transatlantic fibre-optic cable that will connect Canada and the United States with England, France and Spain beginning in 1991.

FIRST TELEPHONE CALL

The first telephone, developed by Alexander Graham Bell in 1876, was called the "Gallow Frame." Bell used it in his Boston laboratory to utter the now famous line to his assistant in the next room: "Mr. Watson, come here; I want to see you." Much of the work behind the first telephone, however, took place in Brantford, Ontario, where Bell had moved in 1870. Indeed, the first call between cities was later made from Brantford to Paris, Ontario in August of 1876.

By 1880, the National Bell Telephone Company of Boston had bought the Canadian patent rights to the invention and incorporated the Bell Telephone Company of Canada.

Today Bell Canada is the largest of the 18 major telephone and telecommunications companies in the country, serving 8.5 million subscribers in 1989. Installed in 50% of Canadian households in 1947, telephone services had spread to 90% by 1966 and were present in virtually every Canadian household by 1975.



National Archives of Canada/C 17335

Alexander Graham Bell.

Mrs. M. Macbeth/National Archives of Canada/C-29468

Radio broadcast, Ottawa, circa 1920s.

SATELLITE SYSTEMS

Canada was a pioneer in distributing television signals by satellite. Hermes, the communications technology satellite launched in 1976, was a milestone in Canadian space history. Its innovations, including tele-health, tele-education and direct broadcasting by satellite (DBS), have had worldwide impact.

Canada's satellites can be thought of as elevated microwave towers locked into geostationary orbit about 35 900 km above the equator. Signals beamed up to them can be relayed anywhere in Canada. Thus, satellites have been particularly valuable in bringing reliable communications to remote corners of the country.

The domestic satellite system supplementing Canada's terrestrial network is owned and operated by Telesat Canada. In 1972, Telesat launched Anik A1, the world's first domestic communications satellite in geostationary orbit. At present, Canada is served by the C and D series of Anik satellites, which provide television, radio, data and message services. The Anik E series is being developed for use in the 1990s.

Commercial services are provided through hundreds of "earth stations" — facilities for transmitting and receiving satellite signals. Strategically located, these stations are often privately owned. Portable earth stations developed by the Department of Communications (DOC) have allowed on-the-spot television coverage of news stories, elections, sports and special events.

MOBILE COMMUNICATIONS

By the late 1990s, Telesat Mobile Incorporated will offer mobile satellite communications services (MSAT) on a preliminary commercial basis; a dedicated satellite will be launched in 1994. This DOC project will improve mobile communications in isolated and sparsely populated areas. Using a relatively small and inexpensive radio terminal, MSAT users will be able to communicate directly by satellite to virtually anywhere in the country.

Many Canadian industries will benefit from MSAT's voice and data services. New business opportunities will be created in domestic and export markets, and new skills will be developed in the labour force. Governments will use MSAT for emergency medical services, disaster relief, resource management and law enforcement.

VSAT SYSTEM

The very small aperture transmitter (VSAT) network is expected to be one of the fastest growing satellite services in the 1990s. The VSAT network is a two-way, point-to-multipoint satellite system. It consists of a master-hub earth station controlling a large number of small and relatively inexpensive earth stations located at customer sites. Canada's VSAT network began with the Telesat Anikom 200 service, which was followed by CANCOM Satlink service. Unitel has also introduced a VSAT system.

CBC/National Archives of Canada/C-53532

CBC television crew, Toronto, circa 1956.

11.6 FEDERAL JURISDICTION

The Department of Communications (DOC) administers the federal government's communications policies and programs. The Department's primary goals are to ensure that Canadians have access to a broad range of communications services at reasonable cost, and that new information technologies are developed and introduced in ways that benefit all Canadians. DOC provides technical certification for broadcasting and regulates the use of the radio frequency spectrum.

TELECOMMUNICATIONS AND TECHNOLOGY

As part of its research efforts, DOC operates two laboratories: the Communications Research Centre (CRC) and the Canadian Workplace Automation Research Centre (CWARC). The CRC researches communication devices and components, and broadcast, communication and space technologies. CWARC performs applied research in computerized office systems (including integrated work stations, open systems interconnection, computer-assisted translation, expert systems and knowledge management), and in the organizational aspects of office automation.

THE 1991 BROADCASTING ACT

After a fundamental review of Canada's broadcasting policy, a new Broadcasting Act came into effect on February 1, 1991. Like its predecessor, the new Act is divided into three parts.

The policy statement and definitions in Part I have been updated to reflect social and technological changes and to clarify the roles and obligations of private and public broadcasters.

Part II restructures the CRTC to allow for greater regional sensitivity and to give the Commission new powers to enforce its regulations. At the same time, the Governor-in-Council is given the authority to issue broad policy directions to the CRTC.

Part III strengthens the CBC's management structure and financial accountability, while its programming independence is enshrined in law for the first time.

CANADIAN CONTENT IN PROGRAMMING

The 1968 Broadcasting Act requires broadcasters to provide high-quality programming using predominantly Canadian resources. Recognizing the economic realities Canadian producers and broadcasters face competing with larger US networks, the federal government established in 1983 the Canadian Broadcast Program Development Fund. Administered by Telefilm Canada, the fund encourages the production and broadcast of quality television programs by private Canadian producers. From 1983 to 1988, the fund invested approximately $243 million in the production of 478 projects whose total budgets exceeded $716 million.

Along with other factors, this investment has led to a boom in domestic programming. Canada's private and public networks now broadcast more prime-time dramatic programming produced in Canada. At the same time, they are working to develop a balance between "in-house" and independently produced programs high in Canadian content.

FRENCH-LANGUAGE BROADCASTING

French-language television viewers in Canada are offered a wide variety of programming. French television services include a national public network (Société Radio-Canada), two private networks (Télé-Métropole and Télévision Quatre Saisons), two educational broadcasters (Radio-Québec and TVOntario's La Chaîne), one international satellite-to-cable broadcaster (TV5), four specialty channels, a Pay-TV network and a variety of community television stations.

French-language broadcasting is monitored by a joint Federal Government–Quebec committee set up in 1985 to address the challenges facing the future of French-language radio and television in Canada.

TASK FORCE ON THE ECONOMIC STATUS OF CANADIAN TELEVISION

In 1990, private television and the CBC faced financial difficulties partly because advertising revenues were less than expected. To address this problem, the federal government established in August 1990 the Task Force on the Economic Status of Canadian Television. The Task Force will

MAKING WAVES

Although many different people were involved in the complex task of inventing and improving radio transmissions, it was a Canadian, Reginald Aubrey Fessenden, who was the first to successfully transmit the human voice. In 1902 he asked his assistant more than a kilometre away, "Is it snowing where you are, Mr. Thiosson?" Four years later he was also the first to broadcast a program of speech and music, including a singer, a violin solo and an address, and was heard this time over hundreds of kilometres.

The first radio broadcasting licence in Canada was issued in 1919 to the Canadian Marconi Company in Montreal under the call letters XWA. XWA later became CFCF, a station still broadcasting today. On May 20, 1920, a distinguished group including the Prime Minister, Sir Robert Bordon, and the leader of the opposition, Mr. Mackenzie King, assembled in the Chateau Laurier in Ottawa to listen to an XWA music broadcast coming from 200 km away.

The first French-language radio station, CKAC, was set up in Montreal in 1922, and by 1924 there were over 50 radio stations in the country. Today Canada licenses over 1,600 AM and FM radio stations, with an additional 3,700 television transmitters and cable systems.

CANADIAN SATELLITES

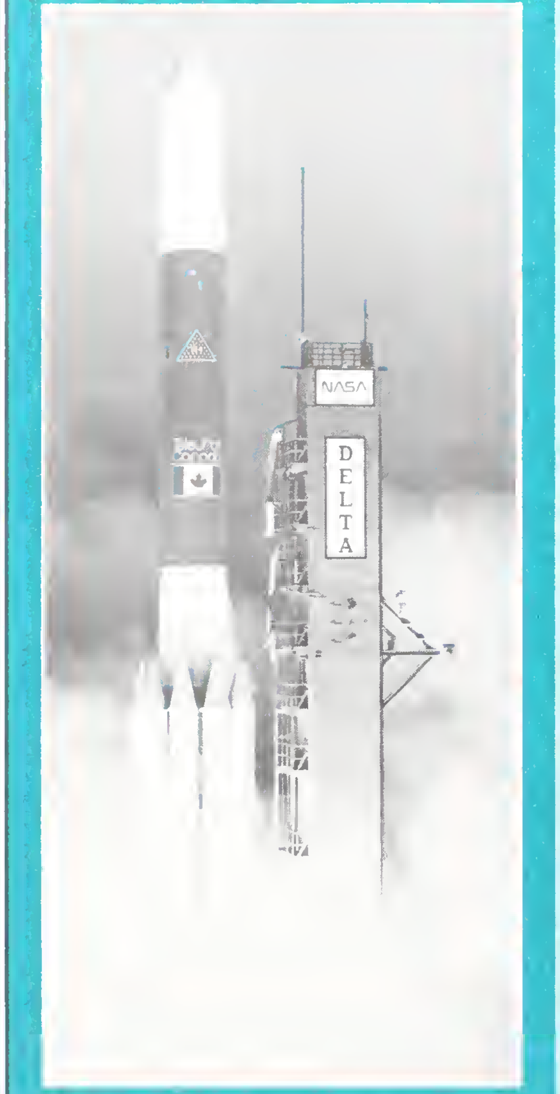
Canada was the third nation in space on Sept. 9, 1962, with the satellite, Alouette 1.

Launched by the National Aeronautics and Space Administration (NASA), the Alouette was designed to conduct scientific experiments in the very upper atmosphere. Its appearance marked the start of a dynamic Canadian career in communications satellites and the study of natural resources from outer space.

Indeed, Canada was the first country to use satellites for domestic communications, with the launch of the Anik A-1 in 1972 and the Anik A-2 in 1973.

The country's commercial satellite system is operated by Telesat, created by Parliament in 1969. Following its creation, Canada worked with the United States in the 1970s on an experimental satellite system using ultra-high radio frequencies designated only for satellite use. Called the Hermes, the system was the most powerful communications satellite ever built. Its power, and the use of the high frequency for message transmission, made it possible to transmit television signals to very small dish antennas on earth.

Since the launch of the first two Anik satellites in the early 1970s, Canada's satellite system has grown in size and complexity. One clear result is that communication services — especially television — have improved. This is especially true in the North, where television service has expanded, giving many people a wide selection of US and southern Canadian television stations. While access to US stations from across the country has improved due to television transmissions from satellites, the plentitude of US television signals has had a marked negative impact on Canada's film and television industries.



Telesat

Launch of the Anik D1 via Delta Rocket, 1982.

NASA Photo

The Canadian Telesat-F Anik C2 satellite and the Space Shuttle Challenger begin their relative separation on June 18, 1983.

study the role of advertising in television, review the Canadian Broadcast Development Fund, and examine the need for new services. Other issues covered will include the extent of competition, particularly in the more limited francophone market, and the probable effects of technological changes such as direct broadcast satellites.

INCREASED SERVICE TO THE NORTH

Under Canada's Northern Broadcasting Policy, residents of the North are entitled to a range of viewing choices, including aboriginal programming. Whenever the government formulates policies on northern and aboriginal broadcasting, it is committed to consulting aboriginal peoples.

The northern Native Broadcast Access Program, jointly developed by the Department of Communications and the Secretary of State, funds 13 aboriginal broadcasters in the North to produce television and radio programs in approximately 27 languages.

As part of its 1988 Broadcasting Policy, the government announced the funding of Television Northern Canada (TVNC), a consortium including six aboriginal broadcasters, the CBC Northern Service and the two territorial governments. TVNC will distribute via satellite to approximately 100 communities.

J.R. Wrathall/National Archives of Canada/PA 95768

Government telegraph station, Sheslay, Northern BC.

BROADCAST SERVICES FOR DISABLED PERSONS

The Canadian broadcasting system strives to meet the needs of Canadians with physical disabilities. Broadcast reading services (such as the French-language La Magnétothèque and the English-language Voiceprint) give visually-impaired and print-handicapped listeners access to newspapers and magazines. Closed captioning services for hearing-impaired viewers are becoming more common, as are descriptive video services that make television accessible to visually-impaired Canadians.

EXTENSION OF OTHER SERVICES

Ethnic broadcasting is becoming more common in Canada, as broadcasters recognize Canada's multicultural and multi-ethnic character. Younger audiences are also being considered, and women are playing more active roles, both in front of the camera and behind the scenes.

Sources

Canada Post Corporation.
Canadian Broadcasting Corporation.
Department of Communications.
National Library of Canada.
Press News Limited.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Telecommunications Statistics*, annual. 56-201
- *Telephone Statistics*, annual. 56-203
- *Radio and Television Broadcasting*, annual. 56-204
- *Cable Television*, annual 56-205

TABLES

LEGEND

..	*not available*	*e*	*estimate*
...	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

11.1 DAILY NEWSPAPERS, NUMBER AND CIRCULATION, 1978-88

Year	English		French		Other		Total	
	Number	Average daily circulation '000	Number	Average daily circulation '000	Number	Average daily circulation '000	Number	Average daily circulation '000
1978	108	4,351	12	1,092	7	91	127	5,534
1979	109	4,367	11	940	6	46	126	5,354
1980	107	4,403	11	979	5	42	123	5,425
1981	106	4,608	11	980	3	38	120	5,624
1982	108	4,577	10	985	2	7	120	5,570
1983	106	4,580	10	964	2	15	118	5,559
1984	101	4,551	11	987	5	28	117	5,566
1985	99	4,653	11	987	5	28	115	5,667
1986	100	4,719	11	1,001	5	28	116	5,747
1987	102	4,812	12	971	5	28	119	5,811
1988	96	4,951	11	1,042	—	—	107	5,993

11.2 NUMBER AND CIRCULATION OF NON-DAILY NEWSPAPERS, 1986-88

Type	Number			Total (combined) circulation ('000)			Average circulation per issue		
	1986	1987	1988	1986	1987	1988	1986	1987	1988
Community newspapers	942	943	1,207	9,749	10,215	16,394	10,349	10,832	13,582
University and school papers	169	169	—	2,079	2,070	—	12,302	12,249	—
Ethnic non-dailies	81	81	123	1,082	1,107	467	13,358	13,667	3,797
Shoppers	57	57	66	1,686	1,686	2,291	29,579	29,579	34,712
Weekend tabloids	10	10	—	620	609	—	62,000	60,900	—
Armed Forces newspapers	13	13	12	50	50	21	3,846	3,846	1,750
Specialized newspapers	8	8	6	367	410	165	45,875	51,250	27,500
Supplements	15	15	11	621	621	381	41,400	41,400	34,636
Total	1,295	1,296	1,425	16,255	16,769	19,719	12,552	12,939	13,838

11.3 PERIODICAL CIRCULATION TRENDS, 1986-88

Type	Number			Total (combined) circulation ('000)			Average circulation per issue		
	1986	1987	1988	1986	1987	1988	1986	1987	1988
General interest	397	435	439	22,261	23,748	23,983	56,073	54,593	54,631
Special interest	794	845	914	12,647	14,520	16,479	15,928	17,515	18,030
Schorlarly	134	164	181	239	272	269	1,784	1,659	1,486
Total	1,325	1,444	1,534	35,147	38,540	40,731	26,526	26,690	26,552

11.4 FINANCIAL STATISTICS OF TELEPHONE SYSTEMS, 1980-88 (THOUSAND DOLLARS)

Year	Capital stock[1]	Long-term debt	Cost of plant	Revenue	Expenses	Construction expenditures
1980	3,856,627	7,265,766	19,742,479	6,178,449	5,612,657	2,509,332
1981	4,119,477	8,015,933	22,297,545	7,379,725	6,715,815	2,853,237
1982	4,573,267	8,683,638	24,467,219	8,323,592	7,674,489	2,860,006
1983	4,742,311	8,720,519	25,917,340	8,970,329	8,135,243	2,229,790
1984	4,879,469	8,611,616	27,307,157	9,695,881	8,748,234	2,403,501
1985	4,957,576	8,816,665	28,483,935	10,334,900	9,306,859	2,554,770
1986	5,339,718	9,047,073	29,986,087	11,029,738	9,949,213	2,860,062
1987	5,825,930	9,100,564	32,111,854	11,472,549	10,315,778	3,349,945
1988	6,332,376	9,814,342	35,122,740	12,128,959	10,829,783	3,856,394

[1] *Includes premium on capital stock*

11.5 TRENDS IN THE CANADIAN TELEPHONE INDUSTRY, 1980-88

Year	Number of systems reporting	Number of employees[1]	Salary and wage payments[2] $'000,000	Telephones in use (company-owned)			
				Business '000	Residential '000	Total '000	Per 100 population
1980	183	100,059	2,182.0	5,022	11,509	16,531	69
1981	153	102,625	2,563.5	5,193	11,751	16,944	70
1982	120	105,061	2,882.6	5,044	11,758	16,802	68
1983	119	100,576	3,001.4	4,885	11,746	16,631	66
1984	112	96,602	3,161.7	4,735	11,745	16,480	65
1985	106	94,134	3,213.1	4,637	11,338	15,975	63
1986	95	91,671	3,387.4	3,247[3]	9,701[3]	12,948[3]	50[3]
1987	81	92,720	3,606.0	3,492[3]	9,952[3]	13,444[3]	52[3]
1988	69	96,146	3,840.5	3,748[3]	10,228[3]	13,976[3]	54[3]

[1] *Full-time employees only.*

[2] *Full-time and part-time employees.*

[3] *Access lines.*

11.6 LOCAL AND LONG-DISTANCE CALLS, LONG-DISTANCE CALLS PER CAPITA AND PER ACCESS LINE, 1984-88

Year	Local calls '000	Long distance calls '000	Total calls '000	Long distance calls per capita	Long distance calls per access line
1984	31,204,784	1,640,932	32,845,716	65	139
1985	32,926,313	1,792,434	34,718,747	71	144
1986	34,672,867	1,959,151	36,632,018	77	151
1987	34,831,475	2,207,429	37,038,904	86	164
1988		2,533,738		97	181

11.7 OPERATING AND FINANCIAL SUMMARY OF THE RADIO AND TELEVISION BROADCASTING INDUSTRY, 1986-89
(THOUSAND DOLLARS)

Item	Private stations		CBC	Private stations		CBC
	Radio	Television		Radio	Television	
	1986			1987		
Operating revenue						
Revenue from sale of air time	611,399	924,183	171,277	648,289	980,090	217,533
Local time sales	466,086	232,397	14,921	495,132	266,946	23,743
National time sales	144,305	532,811	77,266	152,128	564,114	109,138
Network time sales	1,008	158,976	79,090	1,029	149,030	84,652
Prodution and other revenue						
Syndication revenue	421	18,549	—	397	23,140	—
Production revenue	7,926	46,775	—	7,845	49,102	—
Other revenue	2,951	18,786	19,156	6,177	13,556	18,935
Total, operating revenue	622,698	1,008,293	190,433	662,708	1,065,888	236,468
Departmental expenses						
Program	193,922	488,521	391,657	205,849	544,680	409,978
Technical	26,402	54,403	291,125	27,686	60,906	296,309
Sales and promotion	146,451	92,954	31,320	155,987	103,414	32,335
Administration and general	178,518	148,825	310,461	195,909	164,407	315,151
Total, departmental expenses	545,293	784,704	1,024,563	585,431	873,407	1,053,773
Depreciation	22,421	34,853	47,304	24,157	40,507	49,598
Interest expense	31,122	29,269	—	33,337	35,349	—
Other adjustments - income (expense)	1,269	24,626	10,894	10,318	44,342	7,778
Net profit (loss) before income taxes	25,131	184,093	...	30,104	160,966	...
Net cost of CBC operations	...	...	870,540	...	...	859,125
Salaries and other staff benefits	292,118	287,493	573,073	314,981	305,377	561,874
Average number of employees	10,094	7,554	11,612	10,346	7,893	11,350

11.7 OPERATING AND FINANCIAL SUMMARY OF THE RADIO AND TELEVISION BROADCASTING INDUSTRY, 1986-89 (THOUSAND DOLLARS) (concluded)

Item	Private stations		CBC	Private stations		CBC
	Radio	Television		Radio	Television	
	1988			1989		
Operating revenue						
Revenue from sale of air time	705,595	1,092,079	247,183	750,490	1,170,391	286,596
Local time sales	536,541	303,362	23,923	569,981	320,283	35,289
National time sales	167,823	613,907	109,380	179,322	665,166	121,317
Network time sales	1,231	174,810	113,880	1,187	184,942	129,990
Prodution and other revenue						
Syndication revenue	436	26,563	—	1,157	32,191	—
Production revenue	8,295	51,845	—	8,536	51,393	3,155
Other revenue	9,283	17,570	6,410	10,199	22,003	—
Total, operating revenue	723,608	1,188,057	253,593	770,382	1,275,977	289,751
Departmental expenses						
Program	224,784	612,640	437,242	238,268	696,641	486,735
Technical	30,779	62,757	301,797	32,496	71,116	354,268
Sales and promotion	172,585	120,262	33,645	192,072	135,806	35,724
Administration and general	206,778	187,659	318,448	224,184	200,149	289,971
Total, departmental expenses	634,926	983,318	1,091,132	687,020	1,103,712	1,166,698
Depreciation	27,130	46,739	55,450	29,521	51,027	62,628
Interest expense	37,430	39,934	—	56,243	51,894	—
Other adjustments - income (expense)	7,143	28,567	25,753	26,579	25,792	36,544
Net profit (loss) before income taxes	31,266	146,634	. . .	24,177	95,136	
Net cost of CBC operations	. . .	. . .	867,236	. .		903,031
Salaries and other staff benefits	337,572	337,272	579,025	362,405	365,146	616,847
Average number of employees	10,393	8,117	11,215	10,734	8,445	10,605

11.8 OPERATING AND FINANCIAL SUMMARY OF THE CABLE TELEVISION INDUSTRY, 1986-89

Item	1986		1987		1988		1989	
	$'000	%	$'000	%	$'000	%	$'000	%
Revenue								
Subscriptions (direct and indirect)	727,003	94.8	820,884	94.3	932,760	94.3	1,092,516	94.7
Installation (including reconnect)	36,340	4.7	42,836	4.9	46,319	4.7	50,378	4.4
Advertising	—	—	852	0.1	3,014	0.3	1,346	0.1
Other revenue	3,697	0.5	6,053	0.6	7,544	0.8	9,347	0.8
Total, revenue	767,039	100.0	870,625	100.0	989,637	100.1	1,153,586	100.0
Expenses								
Program origination	44,346	5.8	51,575	5.9	55,920	5.7	54,413	4.7
Technical	205,245	26.8	222,340	25.5	243,344	24.6	309,573	26.8
Sales and promotion	28,155	3.7	29,774	3.4	36,170	3.7	40,051	3.5
Administrative and general	180,523	23.5	206,254	23.7	235,184	23.8	259,822	22.5
Depreciation	110,148	14.4	130,432	15.0	148,552	15.0	166,709	14.5
Interest expense	69,005	9.0	97,660	11.2	86,404	8.7	101,193	8.8
Total, expenses	637,421	83.1	738,034	84.8	805,573	81.5	931,761	80.8
Other adjustments - (income) expense	11,229	1.5	−14,345	−1.6	−11,343	−1.1	−11,593	−1.0
Net profit (loss) before income taxes	140,847	18.4	146,936	16.9	195,365	19.7	233,418	20.2
Provision for income taxes	65,686	8.6	57,799	6.6	64,473	6.5	65,003	5.6
Net profit (loss) after income taxes	75,162	9.8	89,137	10.2	130,891	13.2	168,416	14.6
Number of:								
Direct subscribers	5,309	...	5,614	...	5,899	...	6,221	...
Indirect subscribers	696	...	696	...	661	...	665	...
Total, subscribers	6,005		6,310	...	6,559	...	6,886	...
Total, households served by cable	7,686	...	8,035	...	8,345	...	8,770	...
Total, households in licensed area	7,988	...	8,328	...	8,629	...	9,045	

11.9 FINANCIAL SUMMARY FOR DISCRETIONARY SERVICES[1], PAY TELEVISION, 1986-89

Item	1986		1987		1988		1989	
	$'000	%	$'000	%	$'000	%	$'000	%
Revenue								
Subscriptions	149,592	74.1	176,271	76.7	212,863	78.8	236,145	79.4
Installation	6,649	3.3	6,357	2.8	5,231	1.9	4,861	1.6
Converters	37,969	18.8	42,676	18.6	46,580	17.2	44,338	14.9
Other revenue	7,630	3.8	4,401	1.9	5,369	2.0	12,209	4.1
Total, revenue	201,840	100.0	229,706	100.0	270,043	100.0	297,554	100.0
Expenses								
Affiliation payments	93,176	46.2	107,422	46.8	128,703	47.7	142,189	47.8
Program origination								
Technical	13,753	6.8	25,637	11.2	16,417	6.1	17,958	6.0
Sales and promotion	9,718	4.8	10,361	4.5	10,539	3.9	14,271	4.8
Administration and general	18,332	9.1	21,111	9.2	24,697	9.1	29,562	9.9
Depreciation	30,201	15.0	28,408	12.4	28,670	10.6	25,747	8.7
Interest expense	3,603	1.8	3,441	1.5	4,688	1.7	4,612	1.5
Total, expenses	168,782	83.6	196,380	85.5	213,715	79.1	234,339	78.8
Other adjustments - (income) expense	−1,863	−0.9	−520	−0.2	−650	−0.2	−925	−0.3
Net profit (loss) before income taxes	34,921	17.3	33,846	14.7	56,978	21.1	64,140	21.6
Provision for income taxes	10,330	5.1	7,039	3.1	15,111	5.6	14,847	5.0
Net profit (loss) after income taxes	24,591	12.2	26,807	11.7	41,867	15.5	49,293	16.6
Salaries and other staff benefits	..		15,331	6.7	19,177	7.1	23,918	8.0
Number of employees (weekly average)			629		800		899	
Historical cost of fixed assets			148,710		150,462		170,885	
Accumulated depreciation (recorded in accounts)			83,780		88,109		105,568	
Net book value			64,930		62,353		65,317	
Number of subscribers (unduplicated)	939		989		984		1,011	

[1] *Discretionary services are services provided by cable systems in addition to basic cable television services.*

Source
Statistics Canada.

Chapter 12

National Archives of Canada/C-5464

TRANSPORTATION

12.1 INTRODUCTION

CANADA IS THE SECOND LARGEST COUNTRY in the world, after the Soviet Union. With 9 970 610 km^2 of land and freshwater territory, its greatest east-west distance is from Spear Island, Newfoundland to the Yukon–Alaska border, 5 514 km. Throughout Canada's history, efficient transportation has been continually hampered by topographic barriers: rough, rocky terrain between the Atlantic provinces and Quebec; vast stretches of rock, water and barren muskeg north of Lake Huron and Lake Superior, separating Eastern and Western Canada; and a rugged mountain range between the western provinces and the Pacific Coast.

Added to this geographical problem is the task of linking a small population so widely dispersed. This challenge was critical to the newly-emerging nation in 1867; Confederation depended on good transportation links between the two coasts. The great distances separating Manitoba, Alberta, Saskatchewan and British Columbia from Eastern Canada, coupled with the sparse smattering of populations, once made annexation by the United States a distinct possibility. However, Canada endured as a distinct nation, and the great challenge of building a viable Canadian transportation network was ultimately met.

Today, four main modes of transportation serve the nation: air, rail, roads and water. The challenge still remains, though to improve access to far-reaching corners of the country, to enhance efficiency, to reduce the enormous costs of transportation, and to conserve fuel and lessen the negative environmental effects of the transportation network.

Livernois/National Archives of Canada/PA 24047

An old "penny farthing" bicycle.

12.2 GOVERNMENT POLICY TRENDS

Historically, governments have granted funds for constructing transportation systems — airports, seaports, railways and the Trans-Canada Highway. This policy has protected emerging industries from competition, thereby allowing monopolies to be formed, while maintaining strong, regulatory control. These conditions still applied to a great extent when the first National Transportation Act was passed by Parliament in 1967. Since then, air traffic has tripled, trucking has also flourished, water transportation has been improved by faster, more sophisticated vessels, and railways have begun to offer more specialized freight services.

In February 1985, the federal government reached an agreement with provincial governments on the reform of trucking regulations. This agreement became the basis for the new Motor Vehicle Transport Act, 1987. In July 1985, the government put forth proposals for the new National Transportation Act; these proposals were passed in 1987, and came into effect January 1, 1988. The National Transportation Agency, created under the new legislation, acts as the federal government's mediator with the Canadian transportation industry and provides guidance and direction in the application of the new Act.

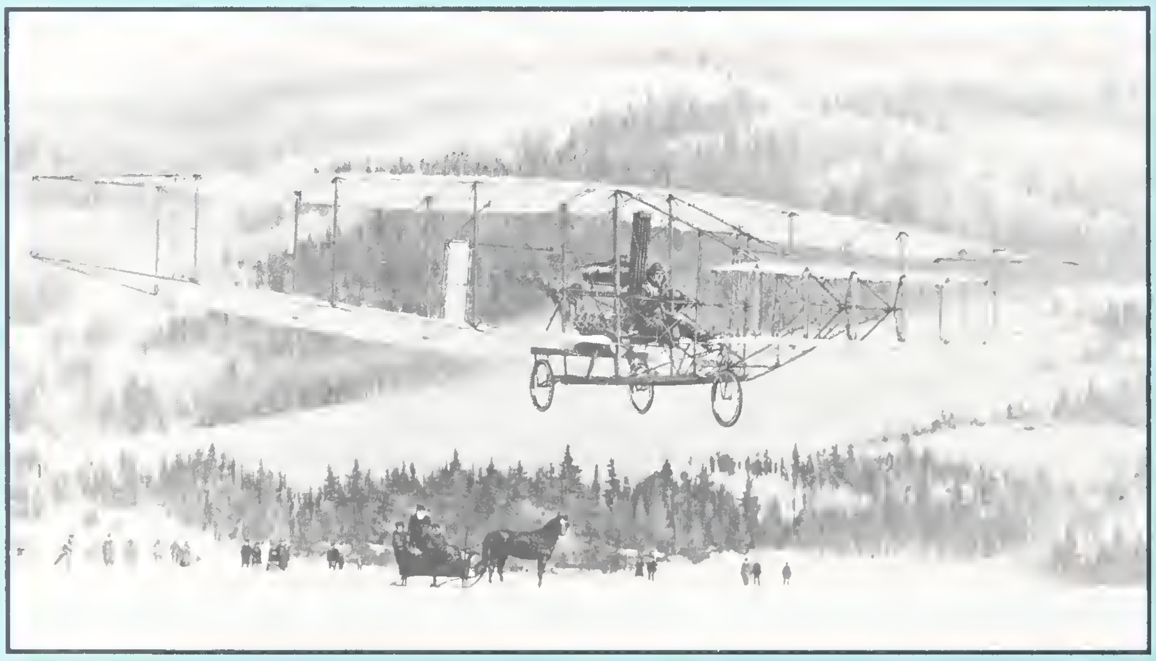
CANADA'S FIRST POWERED FLIGHT

After the success of the telephone, Alexander Graham Bell turned his interest to bridging new distances through aviation and was an integral part of the first flight in Canadian history.

In 1907, Bell formed the Aerial Experiment Association (AEA), a formal research body dedicated to building a motor driven plane and getting it off the ground. To help him with his research, Bell recruited two University of Toronto graduates, John Douglas McCurdy and F.W. Baldwin, and two Americans, Glenn Curtiss and Tom Selfridge.

Within two years, the AEA had reached its goal. On February 23, 1909, John Douglas McCurdy sat at the controls of the first flight in Canada by a powered, heavier-than-air machine. The flight of the "Silver Dart" at Baddeck, Nova Scotia, took place less than six years after the Wright Brothers' success at Kitty Hawk, North Carolina. The Halifax Herald *put the triumph on its front page, saying the plane "eclipsed all association (AEA) records by flying four and a half miles (7.5 kilometres) at an elevation of between forty and fifty feet (12 and 15 metres) in the air and turning a complete circle".*

The flight was the culmination of the group's work and afterwards the AEA disbanded; but the recruits Bell had chosen went on to make aviation history. In 1910, McCurdy was the first pilot to use radio communication between an airplane and the ground. The following year he made the longest over-water flight to that date, attempting to go from Key West, Florida to Havana, Cuba. He travelled 160 kilometres before minor engine troubles forced him to land in the sea. Meanwhile, Curtiss founded a manufacturing company which produced 30 different aircraft models.



Courtesy of National Aviation Museum. Painting by Robert Bradford.

The Silver Dart lifts up over Baddeck Bay in Nova Scotia in the first powered flight in Canada of a heavier-than-air machine.

The general intention of these two Acts is to assist in making Canadian transportation more efficient and cost-effective. They support transportation safety, the establishment of the most effective and efficient transportation systems, with facilities for travellers with disabilities, and the removal or modification of regulations to stimulate competition, which encourages transportation firms to provide new and improved services.

12.3 AIR TRANSPORT

HISTORICAL PERSPECTIVE

In 1909, the first flight in Canada by a powered, heavier-than-air machine took place in Baddeck, Nova Scotia. By the end of World War I, 2,500 Canadian flyers had been trained for military action, and more refined aircraft had been developed and manufactured both for training and for military action. As a result, a strong and viable aviation industry was launched in post-war Canada.

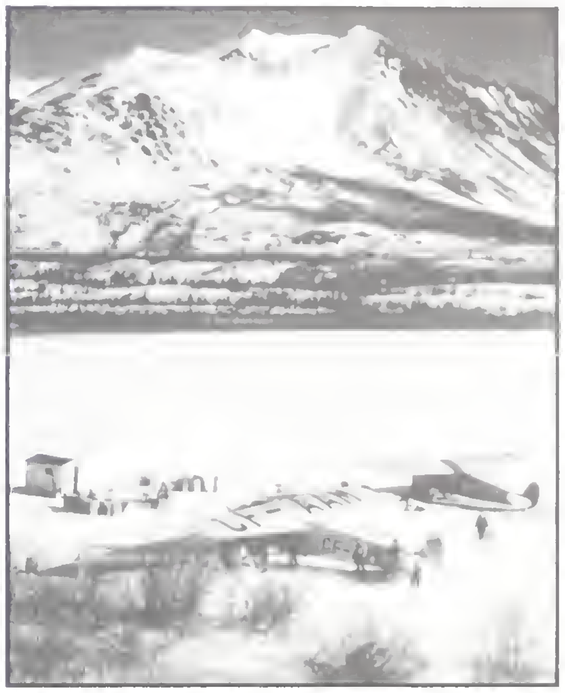
In 1924, regular airmail services commenced in Ontario and Quebec, as well as between Winnipeg, Regina, Calgary and Edmonton. Aviation made a particularly strong impact in the development of the North, where it provided the only available year-round transportation to many points.

In 1937, Trans-Canada Airlines (TCA) came into existence as a non-profit Canadian airline, guaranteed by the government against any loss. Its first regular service, between Vancouver and Seattle, initiated a new era. In 1943, TCA launched the first regular transatlantic service to regularize sporadic mail deliveries between Canadian soldiers overseas and their relatives at home. In 1964, TCA was renamed Air Canada and a period of tremendous growth in passenger and freight services followed.

Canadian Pacific Railways was determined to start a national airline of its own. In 1941, it acquired 11 aircraft-operating companies and established air services under the name United Air Services Ltd. A year later, the name was changed to Canadian Pacific Air Lines (CPAL). The airline was limited in its domestic routings initially, but rapidly expanded internationally from its Vancouver base.

Services offered by Canada's two national airlines were complemented by regional carriers. These included: Québecair, established in 1945; Pacific Western Airlines, which started services in 1946; Eastern Provincial Airways, formed in 1949; and Nordair, formed in 1957.

Wardair began operations in 1953 at a base in Yellowknife, Northwest Territories. In 1962, its base was moved to Edmonton, and in 1966 it became the first Canadian airline to introduce the Boeing 727 for transatlantic passenger service. Before being acquired by Canadian Airlines International in January 1989, Wardair gradually became one of the world's largest charter carriers. In 1985, it began offering international scheduled services, and in 1986, it added domestic scheduled services.



R. Randall/National Archives of Canada/C-57647

Canada's early bushplanes, circa 1935.

THE ERA OF DEREGULATION

Airline deregulation began in 1984. In the following year, the Minister of Transport's white paper "Freedom to Move" was circulated. Since then, many changes have taken place in the structure of the Canadian air transport industry.

In April 1987, Pacific Western obtained control of Canadian Pacific; the result was a new airline, Canadian Airlines International, large enough to compete domestically with Air Canada, and to compete internationally with the world's major foreign airlines. Prior to this merger, Canadian Pacific Airlines had purchased control of Eastern Provincial, Nordair and, indirectly, Québecair.

In October 1988, Air Canada made 45% of its shares available for purchase by employees and the general public. Until this point, the company had been entirely Crown-owned.

To compete effectively in the domestic sector, both Air Canada and Canadian Airlines have dropped a number of shorter routes that were difficult to service profitably with large jet aircraft. Both airlines have entered into agreements with "feeder" airlines, which schedule flights from smaller airports to and from the main airports. These agreements co-ordinate timetables, reservation systems and baggage handling. In most cases, at least some degree of ownership has been obtained by the major carriers.

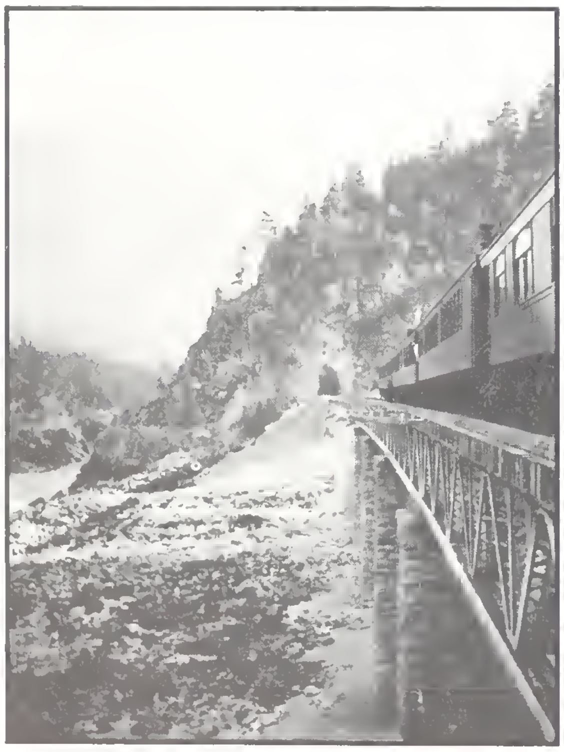
Feeder agreements enable Air Canada and Canadian Airlines to compete more effectively on longer-haul domestic and international routes. At the same time, the regional feeders offer more frequent service to smaller urban centres using smaller state-of-the-art turbine driven propeller (turbo-prop) aircraft. At airports with air traffic control towers, turbo-prop aircraft have increased their share of total landings and take-offs from 10% in 1980 to 24.8% in 1989.

ON THE RAILS

Canada's first railroad was made of wood and extended 23 kilometres along the Richelieu River, linking La Prairie to Saint-Jean, Quebec. The Dorchester, a locomotive shipped in from England, was the first train to run the rails. Thirty-two passengers were on board for its inaugural voyage on July 21, 1836.

Subsequently, trips on this route cost one dollar and lasted three to four hours. Saint-Jean was the main port of entry for the eastern United States, and goods and visitors travelled from there to La Prairie to board a ferry to Montreal.

In 1988, 26.6 million passengers travelled by rail and there were 91 365 km of tracks in Canada.



W.J. Topley/National Archives of Canada/PA 11981

Through the mountains of BC, 1901.

With the major airlines withdrawing from shorter routes, smaller airlines have been able to expand their operations. The vast majority of the smaller airlines operate independently of the major carriers. In 1987, there were 103 small carriers providing scheduled services, up from 77 in 1984. A further 634 offered only charter services, compared to 497 in 1984.

AIR TRANSPORT STATISTICS

Statistics Canada's Aviation Statistics Centre collects information through the National Transportation Act and the Statistics Act and through Transport Canada airports and other specified airports. The Centre uses this information to produce a variety of information products on Canada's air transportation system.

Air carrier statistics In 1955, Canadian carriers took on just under 3 million passengers; in 1989, the total had increased to almost 37 million. Growth was most pronounced in the 1960s and the 1970s. The one decline occurred from 1981 to 1983 when the economy suffered a slowdown. (See Table 12.1.)

In 1955, total operating revenues generated by the carriers amounted to approximately $153 million. In 1989, revenues totalled about $7.8 billion, a 51-fold increase. Operating expenses have followed approximately the same growth curve, though they have generally been lower than operating revenues.

In 1983, however, operating costs exceeded revenues by approximately $14 million. In 1984, the industry returned to profitability with a net income of $80 million. Although net income in 1985 was only $4 million, it increased to $88 million in 1986 and reached an historical high of $169 million in 1987. Although operating revenues increased to $7.8 billion in 1989, net income dropped to an estimated $44 million. (See Table 12.2.)

Airport statistics Of the approximately 2,200 aerodromes in Canada in 1987, 1,221 held operating licences from Transport Canada, which directly operated 144. Transport Canada's operations include major airports in Toronto (Lester B. Pearson), Vancouver, Calgary and Montreal, as well as both large and small airports across the country, extending far into the Arctic.Municipalities and other organizations operate the remainder of Canada's airports. Municipal airports served by scheduled air services are eligible for an operating subsidy from Transport Canada, which also provides capital grants to help construct smaller community airports.

From 1964 to 1980, **aircraft movements** increased an annual average of 8.8% at major airports, rising from just under 1 million to 3.7 million. Conversely, growth in local movements has suffered a number of set-backs. In the 1960s, the federal government eliminated the subsidy it had paid for students of flying clubs, and in the early 1970s fuel scarcities and consequent hikes in fuel prices led to further declines. The recession of the early 1980s had a strong effect; recorded landings and take-offs dropped from 3.7 million in 1980 to 3 million in 1985. However, this total had increased to 3.7 million again by 1989. (See Table 12.3.)

Lester B. Pearson International was Canada's busiest airport in 1989, with aircraft movements up 23.3% since 1985. The airports at Vancouver and Montreal (Dorval) ranked second and third, experiencing increases over the same period of 38.0% and 52.1%, respectively. Airports at Calgary and Ottawa ranked fourth and fifth, rising by 23.1% and 15.5%, respectively.

In 1989, Lester B. Pearson handled 20.3 million passengers, Vancouver handled 9.1 million and Montreal (Dorval) handled 6.5 million. Calgary ranked fourth with 4.5 million passengers, followed by Ottawa with 2.6 million.

12.4 RAIL TRANSPORT

HISTORICAL PERSPECTIVE

Canadian railway history began with the opening of a 26 km line between St-Jean and La Prairie, Quebec on July 21, 1836. Twenty-four years later, there were over 3 200 km; most of this total comprised the Grand Trunk Railway, which extended from Sarnia, Ontario through to Toronto and Montreal and eastward to Rivière-du-Loup, Quebec. A transcontinental railway joining rail lines in the Maritimes to the Grand Trunk and extending the Grand Trunk westward was an important part of Confederation.

Mines and Resources/National Archives of Canada/PA 21714

Kensington Station, PEI.

The Atlantic provinces had invested heavily in railways in hopes of linking up with the Grand Trunk; these provinces saw Confederation as an opportunity to become part of an intra-national railway system. With the promise of such a system written into the British North America Act of 1867, Nova Scotia and New Brunswick joined Confederation. In 1873, Prince Edward Island followed suit when the Dominion government agreed to absorb its railway debt.

British Columbia also wanted a connecting link with Central Canada. The rapid extension of American railways threatened to divert the trade and interests of the West toward the United States. The federal government agreed to construct a 3 200 km railway, originating from the Pacific and continuing through the Rocky Mountains, which would connect the seaboard of British Columbia with the railway system of Canada. With this security, British Columbia joined Confederation in 1871.

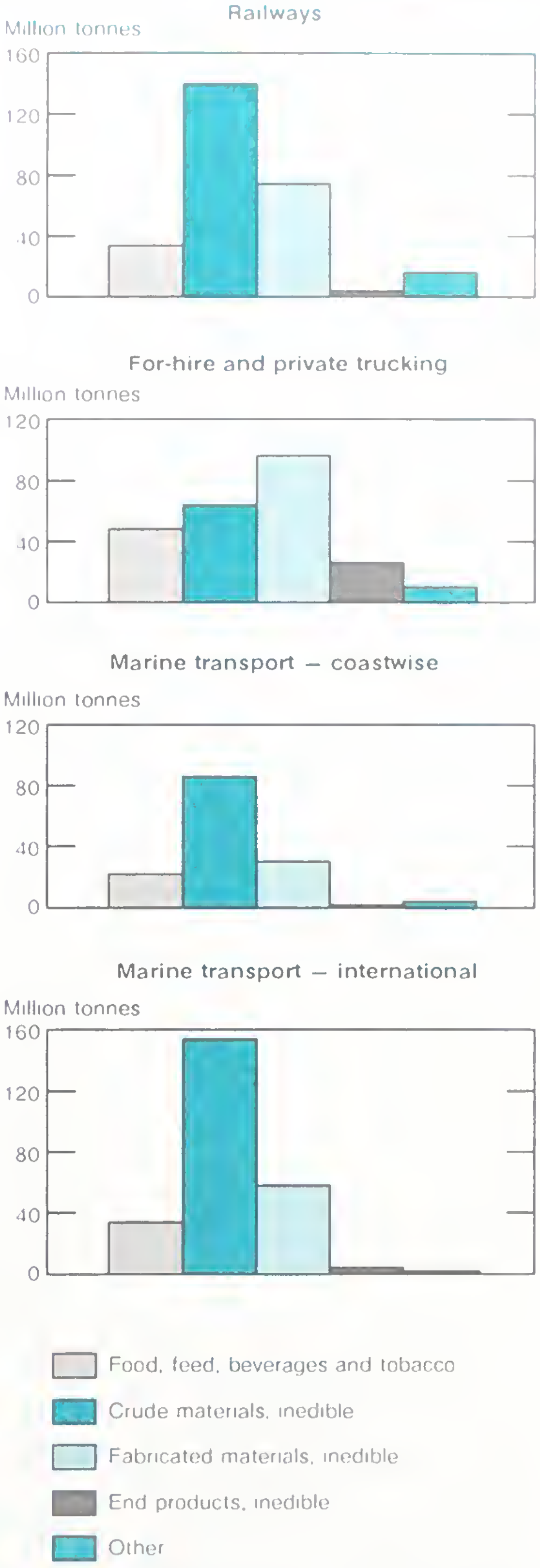
Shortly thereafter, a declining rate of expansion coupled with political upheavals and government turnovers slowed construction of the transcontinental railroad. In 1880, the federal government contracted with a syndicate, later known as the Canadian Pacific Railway Company, to complete the project.

The link from Port Arthur (now Thunder Bay) to Winnipeg was completed in 1883. The following year, construction commenced on the difficult section through the wilderness north of Lake Superior, with costs running as high as $350,000 per km of track in many sections. The last spike was driven at Craigellachie in Eagle Pass, British Columbia, on November 7, 1885. The longest railway in the world was finally operating from coast-to-coast, and East and West were joined by steel.

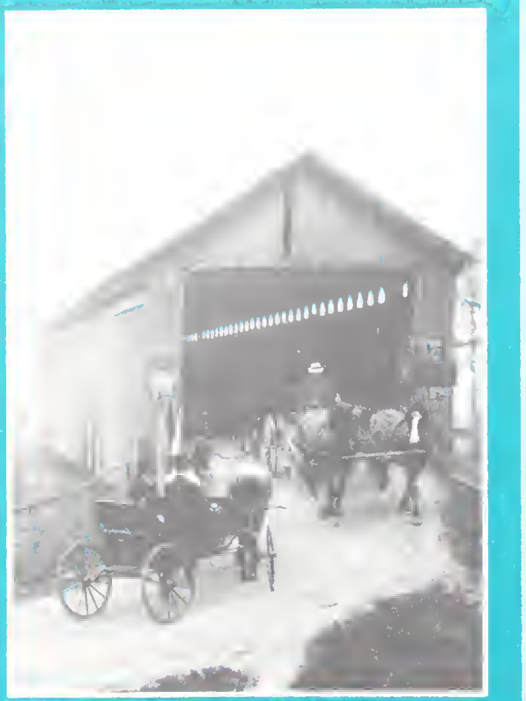
The end of a depression in 1896 was followed by a period of rapid economic expansion. Textile production more than doubled, and iron and steel processing increased threefold. Exports of timber and wood pulp, nickel and copper all showed important increases, while wheat production in the western provinces brought Canada to a leading position in the wheat markets of the world. All these changes had important effects on transportation, especially the expansion of railways during the closing years of the 19th century. A second transcontinental railway, the National Transcontinental, was built at government expense from Moncton, New Brunswick to Winnipeg, Manitoba, while the Grand Trunk Pacific Railway was extended from Winnipeg to thePacific Coast. Concurrently, the Canadian National Railway was authorized to continue its line westerly from Edmonton to the Pacific Coast, and easterly from Port Arthur to Quebec. In 1917, railway mileage had almost doubled from 1903, compared to a 40% population increase during the same period. Canada had the highest per capita railway mileage in the world. However, this was a cost the young country could not support.

Chart 12 1

COMMODITIES TRANSPORTED AS REVENUE FREIGHT, 1988



THE CHANGING FACE OF TRANSPORTATION



John Boyd/National Archives of Canada/PA-61045

Covered bridge, North Hatley, Quebec, 1914.

Canada's transportation systems, essential to the national fabric since the days of Confederation, have been changing significantly in the last few years. In 1987 the ***National Transportation Act****, together with the* ***Motor Vehicle Transport Act****, comprehensively overhauled existing legislation regarding the economic regulation of air, rail, water and truck transportation. The thrust of the legislation was to encourage competition in each transportation area by reducing or eliminating existing regulations. Further changes were signalled in 1989 when it was announced that the federal subsidy of VIA Rail Canada Ltd., the Crown corporation operating all intercity passenger railway services in Canada, would be reduced by more than 40% over the next five years. The VIA cutbacks sparked an emotional national debate reflecting the vital nature of transportation in a country as large as Canada. The VIA cutbacks and the new legislation will shape the development of Canada's transportation systems for many years to come.*

Under the 1987 legislation, it is now easier for new airlines to become licensed to offer domestic air service. Rather than having to show that the new service is required for "public convenience and necessity", airlines now need only prove they are "fit, willing and able" to provide the service safely and with the proper insurance, except in Northern Canada. Restrictions regarding routes, destinations, flight schedules and fares have also been eliminated.

Similar changes also mean that railway companies no longer set their freight rates collectively. Shippers can negotiate confidential contracts with individual railways and it is now easier for railways to abandon or sell unprofitable lines. Also, trucking licence regulations have become standardized from province to province, and the need for truckers to obtain approval for extra-provincial rates eliminated. Special attention has been promised to protect transportation links for northern and remote communities, which tend to be served by relatively few transportation firms.

Some special northern routes were on the protected list of VIA Rail when it announced its reduced service schedule following the 1989 budget cuts, but the historic Canadian, the daily transcontinental, was cancelled. Also lost were some 2,600 jobs and about half of VIA's service routes. Faced with outdated equipment and yearly subsidies of over $600 million in a time of fiscal restraint, the government decided to scale down the operations of VIA rather than invest the estimated billions of dollars necessary to overhaul the aging railway. As a result, Canadians will be expected to rely more heavily on the automobile, bus and airplane for intercity transportation in the years to come.

The results of these sweeping changes in Canada's transportation systems are currently being reviewed by a Royal Commission, which will report on national transportation issues in 1992.

M. Peck/National Archives of Canada/C-45366

A Canadian family outing, 1911.

To avoid a desperate situation, in 1923 the government absorbed two bankrupt lines, the Grand Trunk and the Intercolonial, and used them to form the Canadian National Railway system. The outbreak of World War II in 1939 greatly affected all forms of transport. Heavy capital investment in transportation facilities occurred as a result of construction of defence plants; conversion and expansion of existing industrial capacity steel making; and aircraft, ship, and motor vehicle production. At the end of World War II, Canada's economy further blossomed due to the backlog of demand for all types of consumer and industrial goods, and for raw materials. This pent-up demand was accompanied by significant changes in the transportation industry, with new forms of transport appearing. Ten years after the war had ended, the trucking and aircraft industry had taken a significant bite out of the monopoly of the railways. The result was a more competitive transportation system with a higher sensitivity to the needs of consumers.

RAIL TRANSPORT STATISTICS

The government-owned Canadian National Railway system is one of the largest railway systems in the world. As of December 1986, the Canadian National Railway and the Canadian Pacific Railway owned or controlled 90% of all railway mileage in Canada.

The total length of track operated in 1988 was 91 365 km, a decrease of 2.3% since 1986. In the same period, freight car equipment in use increased by 0.5% and passenger car equipment decreased by 4.8%. Canadian railways carried 300 million tonnes of freight in 1988, an increase of 7.8% from 1986. Total revenue passengers in 1988 were 27 million, up 17.4% from 1986.

Total operating revenues in 1988 were up more than 5% from 1986. This was mainly due to more government assistance, more revenue from passengers and more miscellaneous revenue. A general reduction of 8.2% in rail employment was recorded in the period.

Railway carriers used 36.5% less crude oil in 1988 than in 1986. On the other hand, electric energy consumption increased by 45.5%, while the use of diesel oil increased less dramatically, by 2.3%. (See Tables 12.4 to 12.6.)

12.5 ROAD TRANSPORT

HISTORICAL PERSPECTIVE

Canada's first roads were generally built for military reasons, but with the stagecoach era in the early 19th century, privately owned toll roads and turnpikes became common. On these early roads, vehicular travel was uncomfortable at best. At Confederation, the responsibility for road building was vested almost completely in the provinces. The federal government's role has largely been to contribute toward building and improving roads, particularly the Trans-Canada Highway.

With the advent of the internal-combustion engine, the need for a modern system of highways became apparent, and emphasis on road building techniques increased. Cars became more affordable after World War I, and expenditures on road building increased dramatically. But it was not until after World War II that road building truly boomed, both in Canada and around the world. The first cross-Canada road trip was accomplished in 1946, and construction on the Trans-Canada Highway began in 1950. By 1988, annual expenditures on road building and repair had reached almost $6 billion. The network of highways that now covers the country has established accessibility by passenger car, truck and bus for the large majority of communities across the nation.

MOTOR VEHICLES

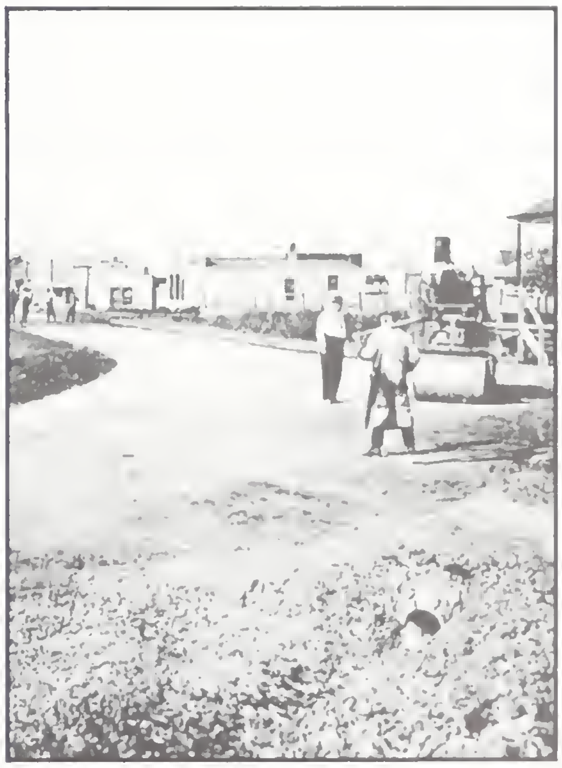
In 1988, there were over 12 million passenger cars in Canada. Once considered a luxury, the automobile has become a virtual necessity for most Canadians — for driving to work, for shopping, and for recreational activities. Higher incomes and relatively easier financing have brought ownership within reach of most families. In fact, Canada now has more cars than households. Though owning and operating an automobile is generally more expensive than travelling by either rail or bus, the family car offers convenience, privacy and ready availability. Consequently, the passenger car now accounts for over four-fifths of all intercity passenger travel.

In 1988, road **vehicle registrations** reached 16.3 million, an increase of over 7% from 1986. In 1988, Ontario registered 35.5% of the total, with Quebec second at 21.0%. These percentages were similar in 1986. The largest percentage of road vehicle registrations are for

AUTOMOBILE FATALITIES

For many years the number of traffic accident deaths rose steadily as did the use of the automobile in Canada. Recent enforcement of seatbelt legislation and stricter safety standards, however, have resulted in decreases in traffic accident deaths even while the number of automobiles has continued to climb.

Deaths from traffic accidents rose steadily from 2,715 in 1954 to 4,652 10 years later. By 1973, they reached an all-time high of 6,706, which prompted the Department of Transport to join with the provinces in an effort to reduce fatalities. Their efforts appear to be paying off: by 1986, the number of deaths had dropped to 4,068 despite a corresponding increase in the number of motor vehicles from 10.6 million in 1973 to 15.2 million in 1986.



National Archives of Canada/PA 15501

Canada's first paved road, 1915.

CANADA BY HIGHWAY

In 1949, Parliament passed the ***Trans-Canada Highway Act*** *and construction on Canada's longest highway began. Stretching 7 725 km, the Trans-Canada was the first highway to link the country, connecting Beacon Hill Park in Victoria, British Columbia to Signal Hill in St. John's, Newfoundland.*

The $1.4 billion highway was officially opened by Prime Minister John Diefenbaker on September 3, 1962, but it was not completed until May 1971. The federal government originally agreed to contribute $150 million to the project, but ended up contributing $825 million. The provinces paid for the remainder of the bill.

The Trans-Canada was a significant improvement for a country that had only 1 600 km of paved road in 1920. Indeed, most of the roads in the country at that time were described as little better than cow paths.

Early roads provided settlers and other inhabitants with an alternative to water transportation. The first important highway, the King's Way, was completed in 1737 and covered 320 km between Quebec and Montreal. In Upper Canada, one of the earliest roads was completed in 1794 and extended from Toronto to Lake Simcoe (Yonge Street).

John Boyd/National Archives of Canada/PA-60821

Early tire trouble, 1910.

passenger automobiles. Of total registrations in 1988, automobiles registered 12.0 million (73.9%), a 3.2% increase from the 1986 figure of 11.5 million. The second largest contributors are trucks and truck tractors, which increased by over 17% from 1986 to 1988. (See Table 12.9.)

Sales of gasoline increased by almost 25% from 1986 to 1988. Consumption is concentrated in Ontario and Quebec, which together used nearly 60% of the total for Canada. This is in keeping with the concentration of motor vehicles in these provinces. Sales of diesel oil and liquefied petroleum gas also increased dramatically from 1986 to 1988, rising by 74.4% and 111% respectively. (See Table 12.10.)

INTERCITY BUSES

In recent years, buses have largely replaced trains as a means of public transportation for relatively short journeys between cities, and in rural areas. In 1988, the Canadian intercity bus industry carried nearly 20 million passengers. Though its major services are intercity, the industry also provides school, charter, tour and sightseeing bus services. Most operators also carry parcels.

Total operating revenues were $333 million in 1988, a slight decrease from 1986; operating expenses increased by 1.3%. Fare passengers carried decreased 22.1% over the period.

URBAN TRANSPORT

The Transportation Division of Statistics Canada surveys those Canadian passenger bus, urban transit, school bus, sightseeing charter and limousine services that earn total gross operating revenues of $100,000 or more. Data are collected on the size, structure and economic performance of Canada's urban transit system.

Total operating revenues for the Canadian urban transit industry were $2.6 billion in 1988, up 13.1% from 1986. More than half of operating revenues come from municipal and provincial subsidies. Operating expenses showed a corresponding increase: 1988 operating expenses were $2.3 billion, up 11.9% from 1986. Fare passengers carried were down 0.5% to 1.5 billion. (See Table 12.11.)

TRUCK TRANSPORT

The growth of the trucking industry over the past 40 years has been a significant development in the Canadian transportation history. Some of the main reasons for this growth are the decentralization of the trucking industry, the growth of metropolitan areas, technological improvements in truck designs and better, more extensive roads. Advantages of truck transport include: the ability to adapt the vehicle to the size of the shipment, enabling economic handling of less-than-carload freight; door-to-door service; less warehousing and handling of goods; and lower packing costs. Technological improvements have made trucks more efficient. With this increased capacity, trucks can carry heavier loads over longer distances. Adding to these improvements is the popular use of diesel engines, which use less fuel, have longer lives and minimize major repairs and overhauls.

In 1988, Canada's **for-hire trucking industry** reported a gross operating revenue of $9.6 billion, up 11.4% from the 1986 total of $8.6 billion. Operating expenses in 1988 were $9.2 billion, up 12.2% from 1986. The total equipment in use also increased. In 1988, the for-hire trucking industry had a fleet of 165,739 trucks. (See Table 12.12.)

Many firms in Canada operate **private trucking** to carry their own freight. Operating expenses for private carriers totalled $4.6 billion in 1988, up 12.8% from 1986. (See Table 12.13.)

12.6 WATER TRANSPORT

HISTORICAL PERSPECTIVE

At the end of the 19th century, negotiations began between Canada and the United States on developing the St. Lawrence canals. This water route seemed the most economical route for transporting goods in and out of the industrial heart of North America. By 1900, the St. Lawrence canals had been enlarged from a minimum depth of nine feet to 14 feet to accommodate large shipments of grain from the rapidly expanding area west of the Great Lakes. The ever-increasing volume of freight moving through the canals led to further improvements in the following year. Suspended during World War I, these improvements were finally completed in 1932 at a cost of $132 million. The growing needs of commerce, the increasing use of vessels with deeper drafts, and competition from the railways encouraged the further development of the St. Lawrence Seaway, completed in 1959. The Seaway provided a deep waterway extending from the Atlantic Ocean to the Great Lakes, making it possible for Canada to become a world leader in the export of grain. The Seaway also provided low cost transportation for raw materials, and has benefited all other modes of transportation because goods carried on the Seaway must be transported there and to their final destination.

COAST GUARDING IN CANADA

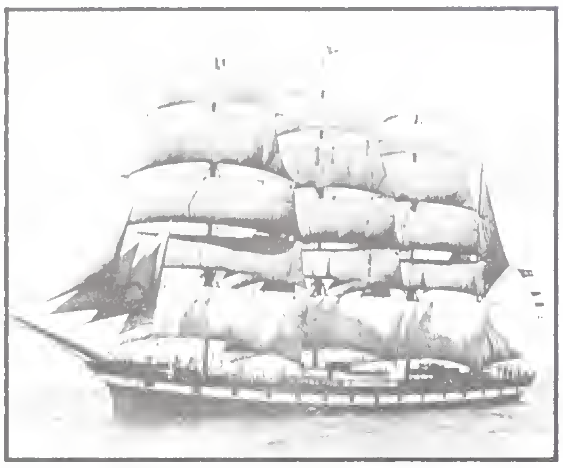
Coast guarding in Canada can be traced back to 1665, when public funds were first devoted to shipbuilding and mariner training. Later on, funds were also designated to build lighthouses and other marine safety aids. The first lighthouse was built at the fortress of Louisbourg in 1733.

Today, the Canadian Coast Guard (CCG) ensures the safe navigation of all ships and oversees the control of all vessels operating in Canadian waters. With an operating budget of more than $700 million, it employs about 6,000 people.

The coast guard fleet includes icebreakers, aid and support vessels (for ship channel maintenance and submarine cable operations), fixed-wing aircraft and helicopters. It provides and maintains approximately 13,000 channel buoys and 10,000 land-based aids, which include 266 lighthouses. Navigational and weather advice is also supplied by 33 coastal radio stations and 15 vessel traffic centres.

Courtesy of Transport Canada

Canadian Coast Guard on an Arctic resupply mission, 1981.



Dept. of the Interior/National Archives of Canada/C-334

Four-masted barque.

While Canada's waterways were growing, the country's ocean shipping and shipbuilding industries were declining. In the earlier part of the 20th century, competition from foreign vessels and the introduction of iron and steel ships led to declining Canadian shipbuilding and vessel ownership. This deterioration continued to the point of near extinction before World War I gave new life to the industry. By 1918, Canada's merchant fleet and shipbuilding capacity were among the largest in the world. The Depression of the late 1920s and 1930s, coupled with growing competition from other Maritime nations, brought about a second decline in Canada's shipping industry. At present, Canada's shipbuilding industry continues to experience a lull in activity.

CANADIAN PORTS AND FREIGHT MOVEMENT

Canada Ports Corporation (Ports Canada) is a federal system of ports administered according to the Canada Ports Corporation Act, 1983. Of these ports, seven are autonomous local port corporations; these are located in Halifax, Montreal, Prince Rupert, Quebec, Saint John, St. John's and Vancouver. The other ports are administered on a divisional basis by Ports Canada. The national ports policy provides services necessary for Canada's international shipping trade at national, regional and local levels.

Ports Canada operates on a decentralized basis: each of the local port corporations has a high degree of autonomy, and are administered according to established commercial principles.

Ports Canada handles nearly half of Canadian port traffic, and more than 95% of container traffic. In 1988, 390 million tons of cargo were handled in domestic and international shipping. Almost 40% of this was handled at five ports — Vancouver, Sept-Îles, Montreal, Port-Cartier and Quebec–Lévis. These ports accounted for over half of the international tonnage and close to one-fifth of the domestic tonnage.

With over 70 million tons handled in 1988, Vancouver is Canada's busiest and most important port; three times more freight passed through its harbours than the next busiest port, Sept-Îles. (See Table 12.15.)

In international seaborne shipping, 10.4% more ships entered Canadian ports in 1988 than in 1986. The total capacity, or net register tons, of these ships increased by 12.3%. In domestic shipping, the number of vessels entering Canadian ports in 1988 increased 17.5% from 1986, with a capacity increase of 32.8%.

L.R. Voligny/National Archives of Canada/PA-117996

An early ferry, Alberta, 1917.

FERRIES

Ferries link many of Canada's islands to the mainland. For constitutional and historical reasons, Transport Canada provides direct financial support to ferry and coastal shipping services in Eastern Canada, and indirect support to services in other regions.

On the West Coast, ferries are operated by provincial Crown corporations and private companies. Federal grants are provided to the provinces under arrangements similar to those made with eastern provinces. The Swartz Bay–Tsawwassen ferry linking the BC mainland to Vancouver Island is subsidized as part of the Trans-Canada Highway.

The Northern Community Resupply Transportation Co. Ltd., a Crown corporation, operates marine transportation services on the Athabaska and Mackenzie rivers, on the Western Arctic Coast and in the Keewatin District of Hudson Bay.

CANADIAN COAST GUARD

The Coast Guard fleet includes icebreakers, aid and supply vessels, search and rescue vessels, specialized vessels for ship channel maintenance and submarine cable operations, and fixed-wing aircraft and helicopters.

Through its radio stations and other communications facilities linked to domestic telephone and telex lines, the Coast Guard provides 24-hour, ship-to-shore safety and commercial communications, and regularly scheduled weather and navigation information broadcasts. In some areas, particularly busy harbours, this network is supplemented by local systems that monitor and direct ship movements.

In 1988, the Canadian Coast Guard owned 15 combination icebreaker/navigation aid vessels. On average, more than 1,700 ships a year receive icebreaker support either singly or in convoy, or are routed through the ice. Since 1970, ports in the Gulf of St. Lawrence have been accessible throughout the year. During the summer, some icebreakers take part in annual Arctic resupply operations. The icebreakers escort a fleet of tankers and dry cargo vessels that deliver petroleum, building supplies, food, clothing, furniture and other products needed by the residents of remote settlements and military installations.

Sources

Canada Ports Corporation.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Air Carrier Operations in Canada*, quarterly. 51-002
- *Air Carrier Traffic at Canadian Airports*, quarterly. 51-005
- *Air Passenger Origin and Destination*, Domestic Report, annual. 51-204
- *Air Passenger Origin and Destination*, Canada/United States Report, annual. 51-205
- *Canadian Civil Aviation*, annual. 51-206
- *Air Charter Statistics*, annual. 51-207
- *Aviation in Canada: Historical and Statistical Perspectives on Civil* Aviation, 1986. 51-501
- *Railway Transport, Railway Commodity Origin and Destination* Statistics, annual. 52-214. Discontinued. Last issue 1984.
- *Railway Transport in Canada, General Statistics*, annual. 52-215
- *Passenger Bus and Urban Transit Statistics*, annual. 53-215
- *Road Motor Vehicles, Registrations*, annual. 53-219
- *Trucking in Canada*, annual. 53-222
- *Shipping in Canada*, annual. 54-205
- *International Seaborne Shipping Statistics*, annual. 54-209. Discontinued. Last issue 1985. See 54-205 *Shipping in Canada*.
- *Oil Pipe Line Transport*, annual. 55-201

TABLES

LEGEND

. . *not available*
. . . *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*
e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

12.1 SUMMARY OF CANADIAN COMMERCIAL AVIATION, OPERATIONAL STATISTICS, SELECTED YEARS, 1955-89[1]

Year	Passengers '000	Passenger kilometres '000 000	Cargo kilograms '000	Mail kilograms '000	Hours flown '000
1955	2,763	1 983	105 163	11 008	623
1960	4,830	4 507	95 401	15 709	879
1965	6,832	8 729	128 618	22 879	1,128
1970	12,031	18 605	256 420	30 068	1,669
1971	12,889	18 527	280 887	35 566	1,813
1972	14,422	21 739	307 333	38 093	1,923
1973	17,493	25 897	340 226	43 315	2,145
1974	19,601	29 166	344 429	48 096	2,301
1975	20,493	31 539	362 711	45 032	2,466
1976	20,994	32 797	341 021	55 892	2,467
1977	22,318	35 553	390 502	58 143	2,578
1978	23,649	38 249	410 204	56 756	2,664
1979	27,123	44 901	447 817	57 576	2,928
1980	28,554	46 996	399 418	59 978	3,091
1981	27,189	46 086	374 893	60 525	2,515
1982	24,447	44 179	344 703	65 431	2,454
1983	23,789	43 370	357 152	68 768	2,235
1984	27,701	46 444	464 088	80 604	2,290
1985	29,056	49 580	498 706	81 457	2,273
1986	30,819	52 170	480 341	79 464	2,365
1987	31,863	52 000	494 262	69 010	2,552
1988	36,009	63 860	631 264[2]	. .	2,073
1989p	37,122	67 939	649 796[2]	. .	2,215

[1] *Levels I-V 1955-87, levels I-IV 1988-89.*
[2] *Cargo including mail.*

12.2 FINANCIAL STATEMENTS, SELECTED COMPONENTS, CANADIAN AIR CARRIERS[1], SELECTED YEARS, 1955-89 (MILLION DOLLARS[2])

Year	Operating revenues	Operating expenses	Total net non-operating income	Net income	Total assets	Interest expenses
1955	153	147	--	4	123	2
1960	243	245	−4	−7	335	9
1965	408	383	−10	13	397	15
1970	842	811	−31	−2	1,166	48
1971	918	861	−37	12	1,250	49
1972	1,056	978	−35	23	1,382	47
1973	1,254	1,173	−40	24	1,669	61
1974	1,598	1,525	−68	6	2,070	91
1975	1,891	1,823	−90	−7	2,261	108
1976	2,058	2,002	−88	−16	2,112	120
1977	2,358	2,215	−72	39	2,237	104
1978	2,680	2,514	−2	98	2,784	97
1979	3,256	3,091	−8	95	3,378	117
1980	3,985	3,798	−1	112	3,963	139
1981	4,649	4,494	−64	45	4,589	210
1982	4,679	4,693	−113	−84	4,851	226
1983	4,676	4,609	−90	−14	5,307	201
1984	5,093	4,932	−73	80	5,654	216
1985	5,621	5,520	−123	4	5,942	236
1986	5,981	5,738	−142	88	6,929	270
1987	6,386	6,025	−101	169	6,960	228
1988	7,137	6,873	−83	121	7,930	217
1989p	7,796	7,701	−54	44	8,820	233

[1] *Levels I-V 1955-87, levels I-IV 1988-89.*
[2] *Current dollars.*

12.3 AIRCRAFT MOVEMENTS AT AIRPORTS WITH AIR TRAFFIC CONTROL TOWERS, 1972-89

Year	Number of airports	Number of movements by type of operation ('000)		
		Itinerant[1]	Local[2]	Total movements
1972	55	2,235	2,710	4,945
1973	56	2,587	2,667	5,254
1974	57	2,540	3,153	5,693
1975	60	2,994	3,404	6,398
1976	60	3,038	3,449	6,487
1977	59	3,228	3,461	6,689
1978	60	3,408	3,454	6,862
1979	61	3,645	3,556	7,201
1980	61	3,697	3,368	7,065
1981	60	3,569	3,132	6,701
1982	60	3,067	2,523	5,590
1983	61	2,912	2,360	5,272
1984	61	2,966	2,101	5,067
1985	61	3,031	1,907	4,938
1986	61	3,144	2,056	5,201
1987	61	3,366	2,144	5,510
1988	60	3,536	2,151	5,687
1989	60	3,706	2,250	5,956

[1] *Landings or take-offs that enter or leave the tower control zone.*

[2] *Landings or take-offs that remain at all times within the tower control zone.*

12.4 LENGTH OF TRACK OPERATED AS AT DECEMBER 31, 1986-88 (KILOMETRES)

Item	1986	1987	1988
Class I			
Canadian National	50,708	51,364	48,753
Canadian Pacific	33,458	33,369	32,638
VIA Rail	—	—	—
Sub-total	84,166	84,733	81,391
Class II and III	9,378	9,451	9,973
Total	93,544	94,184	91,365

12.5 EQUIPMENT IN SERVICE AS AT DECEMBER 31, 1986-88

Item	1986 No.	1987 No.	1988 No.
Locomotives			
Road freight	3,019	2,952	2,942
Road passenger	226	231	229
Yard	518	541	541
Associated equipment	134	131	124
Total	3,897	3,855	3,836
Freight car equipment			
Box car	43,746	37,054	39,320
Hopper car	28,989	27,754	39,922
Gondola car	19,310	18,440	17,094
Refrigerator car	974	871	602
Flat car	27,692	28,749	29,085
Stock car	710	663	293
Caboose	1,808	1,749	1,707
All other freight cars	6,280	6,399	6,133
Total	129,509	121,679	134,156
Passenger car equipment			
Head-end car	148	87	87
Meal service and lounge car	120	110	110
Sleeping car	159	154	154
Conventional coach	315	303	296
Tempo coach	25	4	4
LRC coach	100	110	110
Turbo train car	—	—	—
Rail diesel car	85	78	—
Commuter car	343	80	472
Total	1,295	926	1,233

12.6 RAILWAYS, ALL CARRIERS, SUMMARY STATISTICS, 1986-88

Item		1986	1987	1988
Revenues				
Freight revenue	$'000	6,216,841	6,562,532	6 571,037
Passenger revenue	"	250,025	244,741	276,680
Miscellaneous rail revenue	"	210,717	204,892	246,265
Revenue from services for VIA Rail	"	243,327	181,447	145,142
Government payments	"	649,573	705,643	764,015
Total revenue	"	7,570,483	7,899,255	8,003,139
Expenses				
Ways and structures	"	1,182,877	1,222,481	1,271,674
Equipment	"	1,759,826	1,811,269	1,799,923
Rail operation	"	2,330,982	2,305,853	2,362,856
General	"	1,513,679	1,498,731	1,544,557
Total expenses	"	6,787,364	6,838,334	6,979,010
Number of employees				
General	No.	13,556	13,193	12,780
Road maintenance	"	20,236	18,727	18,079
Equipment maintenance	"	23,496	22,222	20,545
Transportation	"	27,558	28,027	26,465
Total	"	84,846	82,169	77,869
Fuel and power consumed				
Electric energy	'000 kWh	23 761	35 835	34 581
Diesel oil	'000 litres	2 193 239	2 220 747	2 242 893
Crude oil	"	135 223	95 972	85 843

12.7 EXPENDITURES ON HIGHWAY, ROAD, STREET AND BRIDGE CONSTRUCTION, 1990[1] (MILLION DOLLARS)

Province or territory	Federal and provincial governments		Municipal governments		All other sectors		Total
	New	Repair	New	Repair	New	Repair	
Newfoundland	128.4	31.0	25.0	0.8	6.7	3.2	195.1
Prince Edward Island	43.0	11.6	0.3	0.2	0.8	0.1	56.0
Nova Scotia	160.5	102.5	33.2	4.4	12.0	3.0	315.5
New Brunswick	134.0	9.1	16.4	7.1	5.5	4.0	176.2
Quebec	367.5	182.1	692.4	104.3	83.2	51.2	1,480.7
Ontario	505.3	270.0	699.8	172.7	131.7	40.0	1,819.4
Manitoba	108.5	50.4	77.8	2.3	10.2	5.9	255.0
Saskatchewan	135.3	76.4	47.5	13.6	9.0	8.2	290.1
Alberta	481.9	119.8	241.5	60.3	125.9	27.6	1,057.0
British Columbia	463.8	260.3	149.4	41.5	104.3	71.0	1,090.2
Yukon and Northwest Territories	47.0	42.8	12.0	0.5	0.8	0.1	103.3
Canada	2,575.2	1,156.0	1,995.4	407.7	490.1	214.3	6,838.7

[1] *1990 forecast data*

12.8 MOTOR VEHICLES REGISTERED FOR ROAD USE, BY PROVINCE AND TERRITORY, 1986-88

Province or territory	1986	1987	1988
Newfoundland	273,192	286,792	307,049
Prince Edward Island	78,619	82,362	82,531
Nova Scotia	505,116	492,949	512,067
New Brunswick	426,482	436,635	451,562
Quebec	3,145,116	3,317,472	3,432,035
Ontario	5,367,277	5,572,927	5,804,105
Manitoba	758,947	776,866	769,976
Saskatchewan	669,256	734,747	755,350
Alberta	1,739,472	1,758,059	1,820,141
British Columbia	2,222,717	2,290,735	2,350,437
Yukon	20,886	22,675	27,077
Northwest Territories	20,231	21,831	23,931
Canada	15,227,311	15,794,050	16,336,261

12.9 MOTOR VEHICLES REGISTERED, BY TYPE, AND BY PROVINCE AND TERRITORY, 1988

Province or territory	Passenger cars	Trucks, truck tractors and buses	Motorcycles and mopeds	Other	Total
Newfoundland	198,556	90,228	10,798	7,467	307,049
Prince Edward Island	59,113	21,566	1,670	182	82,531
Nova Scotia	348,173	146,819	16,696	379	512,067
New Brunswick	301,698	133,179	11,290	5,395	451,562
Quebec	2,796,642	478,999	95,209	61,185	3,432,035
Ontario	4,577,803	1,087,433	138,869	—	5,804,105
Manitoba	535,985	220,685	13,272	34	769,976
Saskatchewan	460,969	280,545	6,276	7,560	755,350
Alberta	1,141,705	639,694	38,742	—	1,820,141
British Columbia	1,634,863	649,519	66,055	—	2,350,437
Yukon	9,028	15,472	812	1,764	27,077
Northwest Territories	21,466	1,726	628	111	23,931
Canada	12,086,001	3,765,866	400,317	84,077	16,336,261

12.10 SALES OF MOTIVE FUELS, BY PROVINCE AND TERRITORY, 1986-88 (THOUSAND LITRES)

Item and province or territory	1986	1987	1988
Gasoline			
Newfoundland	521 886	535 421	568 172
Prince Edward Island	165 107	166 155	175 611
Nova Scotia	1 039 829	1 057 589	1 095 247
New Brunswick	914 122	956 130	999 483
Quebec	6 578 395	6 651 383	6 843 471
Ontario	11 715 600	11 978 200	12 368 600
Manitoba	1 296 202	1 308 123	1 339 359
Saskatchewan	[1]	404 300[2,3]	1 157 310
Alberta	[1]	1 903 008[3]	3 768 243
British Columbia	3 551 813	3 519 014	3 597 655
Yukon	54 591	57 018	60 662
Northwest Territories	21 679	39 187	31 310
Total, net sales	25 859 224	28 575 527	32 005 123
Total, gross sales	32 830 267	33 215 243	34 025 427
Diesel oil			
Total, net sales	3 304 689	4 377 002	5 762 088
Liquefied petroleum gases			
Total, net sales	40 043	41 256	84 483

[1] *Road tax removed (Alberta, April 1, 1978; Saskatchewan, April 1982).*

[2] *Estimated from quarterly report on energy supply-demand in Canada, Statistics Canada Catalogue 57-003.*

[3] *Represents net sales from July to December.*

12.11 CANADIAN URBAN TRANSIT INDUSTRY, 1987 AND 1988

Year and item		Classes 1 and 2 ($500,000 and over)	Class 3 ($100,000-$499,999)	Total, all classes
1987				
Establishments reporting	No.	65	12	77
Total operating revenue	$'000	2,440,385	3,289	2,443,674
Total operating expenses	"	2,144,045	8,319	2,147,365
Number of employees (including working owners)	No.	36,081	99	36,180
Fare passengers carried	'000	1,468,963	318	1,469,281
Equipment operated				
Buses	No.	11,348	50	11,398
Other	"	2,023	5	2,028
Total	"	13,371	55	13,426
1988				
Establishments reporting	No.	68	5	73
Total operating revenue	$'000	2,579,803	1,992	2,581,795
Total operating expenses	"	2,299,589	1,993	2,301,582
Number of employees (including working owners)	No.	37,141	50	37,191
Fare passengers carried	'000	1,514,822	188	1,515,010
Equipment operated				
Buses	No.	10,535	19	10,554
Other	"	2,809	16	2,825
Total	"	13,433	35	13,379

12.12 CANADIAN FOR-HIRE TRUCKING, SUMMARY STATISTICS, INCLUDING HOUSEHOLD-GOODS MOVERS, 1988

	Establishments reporting No.	Operating revenues $'000	Operating expenses	Net operating revenues $'000	Total employees No.
Newfoundland	75	79,669	75,045	4,624	990
Prince Edward Island	31	40,978	40,814	164	396
Nova Scotia	174	177,523	173,251	4,272	2,150
New Brunswick	170	382,967	362,207	20,760	3,128
Quebec	1,464	1,598,019	1,512,891	85,128	16,827
Ontario	1,452	4,084,174	3,937,483	146,719	43,134
Manitoba	240	736,930	720,141	16,789	8,277
Saskatchewan	233	249,711	240,980	8,732	2,648
Alberta	936	1,304,413	1,230,371	74,133	13,033
British Columbia	1,068	907,110	870,913	36,194	8,316
Yukon	11	25,220	24,547	674	242
Northwest Territories	13	24,995	24,129	866	256
Canada	5,867	9,611,711	9,212,772	419,056	99,397

	Equipment					
	Straight trucks No.	Road tractors No.	Semi-trailers No.	Full trailers No.	Other equipment No.	Total
Newfoundland	282	307	532	144	7	1,272
Prince Edward Island	75	127	256	15	27	500
Nova Scotia	517	827	1,653	76	158	3,231
New Brunswick	424	927	3,170	52	111	4,684
Quebec	3,717	7,097	14,239	1,012	1,821	27,886
Ontario	7,205	15,818	46,068	888	2,873	72,852
Manitoba	821	2,825	9,706	463	1,021	14,836
Saskatchewan	529	989	2,494	109	55	4,176
Alberta	2,342	5,153	13,460	1,184	866	23,005
British Columbia	1,710	3,130	6,967	486	489	12,782
Yukon	37	47	126	—	1	211
Northwest Territories	68	60	159	14	3	304
Canada	17,727	37,307	98,830	4,443	7,432	165,739

12.13 PRIVATE TRUCKING, SUMMARY STATISTICS, BY INDUSTRY GROUP, 1988

Item		Construction	Manufacturing	Others[1]	Government	Wholesale	Retail	Total
Firms reporting	No.	630	578	453	278	471	77	2,487
Operating expenses								
Drivers on company payroll	$'000	153,646	483,904	453,841	307,353	347,008	65,532	1,811,284
Drivers leased	"	1,377	22,891	2,767	1,135	6,317	9,480	43,967
Mechanics	"	31,384	50,076	55,024	56,816	29,606	4,954	227,859
Others	"	29,008	84,056	67,643	45,067	72,753	11,881	310,409
Fuel (including fuel tax)	"	77,344	141,658	103,602	57,136	101,905	27,037	508,683
Repairs and maintenance (including purchased repairs, tires and lubricants)	"	89,737	163,545	134,176	114,675	106,645	20,498	629,275
Broker operators	"	60,798	81,666	67,930	12,392	65,047	4,157	291,989
Purchased transportation railroad (piggyback)	"	10	19,410	2,596	—	1,920	9,107	33,043
Vehicle rent without drivers	"	10,893	53,625	26,248	4,691	41,317	20,432	157,206
Insurance and licences	"	22,275	35,177	22,660	11,885	25,992	7,682	125,672
Depreciation on transport equipment	"	40,688	69,198	58,671	36,232	55,914	13,347	274,051
Other expenses	"	7,753	56,660	26,554	9,376	108,328	1,848	210,518
Total	"	524,913	1,261,866	1,021,713	656,759	962,750	195,955	4,623,956
Employees								
Drivers	No.	6,138	16,091	14,880	13,687	10,781	3,592	65,169
Salary and wages	$'000	155,023	506,795	456,608	308,488	353,324	75,012	1,855,251
Average salary	$	25,256	31,496	30,686	22,539	32,773	20,883	28,468
Mechanics	No.	1,117	1,511	1,677	1,785	872	226	7,188
Salary and wages	$'000	31,383	50,076	55,024	56,816	29,605	4,954	227,859
Average salary	$	28,096	33,141	32,811	31,830	33,951	21,918	31,700
Equipment operated (owned or leased), distance travelled and fuel consumed								
Straight trucks	No.	15,312	14,504	25,139	24,623	10,376	2,399	92,353
Total distance travelled	'000 km	413 534	414 259	567 008	438 711	308 021	61 684	2 203 215
Average distance per unit	km	27 007	28 562	22 555	17 817	29 686	25 712	23 856
Total fuel consumed	'000 L	131 394	153 978	187 810	141 877	107 027	19 439	741 525
Road tractors	No.	1,613	4,341	1,808	191	3,201	1,074	12,228
Total distance travelled	'000 km	78 128	342 776	115 518	4 407	252 105	146 738	939 671
Average distance per unit	km	48 436	78 962	63 893	23 076	78 758	136 628	76 846
Total fuel consumed	'000 L	45 636	183 030	69 806	2 689	142 579	59 200	502 940

[1] *The industry group "Others" includes mining, fishing, logging, etc.*

12.14 VESSELS ENTERED AT CANADIAN PORTS, 1980-88

Year	In international seaborne shipping		In domestic shipping[1]		Total	
	Vessels	Net register tons[2]	Vessels	Net register tons[2]	Vessels	Net register tons[2]
1980	28,754	168,477,033	38,015	87,846,321	66,769	256,323,354
1981	25,321	170,404,933	34,271	81,637,381	59,592	252,042,314
1982	24,791	152,476,124	29,148	74,965,550	53,939	227,441,674
1983	26,100	158,990,860	30,363	98,409,171	56,463	257,400,031
1984	22,515	168,783,972	28,868	90,050,658	51,383	258,834,630
1985	26,555	167,701,297	27,228	79,243,728	53,783	246,945,025
1986	28,086	165,577,375	25,616	76,056,320	53,702	241,633,695
1987	29,235	174,214,772	24,638	80,481,451	53,873	254,696,223
1988	31,011	185,978,466	30,107	101,021,832	61,118	287,000,298

[1] *The Transportation Division has decided to use the term "domestic" rather than "coastwise" when referring to marine activity, so as to indicate that this activity includes inland shipping as well.*

[2] *The capacity of the spaces within the hull, and the enclosed spaces above the deck, available for cargo and passengers, excluding spaces used for the accommodation of officers and crew, navigation, propelling machinery and fuel. A register ton is equivalent to 100 cu ft and it is expected that this internationally recognized measure, like the nautical mile and the knot, will continue in use for some considerable time.*

12.15 CARGOES LOADED AND UNLOADED AT PRINCIPAL CANADIAN PORTS, BY PROVINCE, 1988, WITH TOTALS FOR 1986-88 (THOUSAND TONNES)

Province and port	International		Coastwise		Total		
	Loaded	Unloaded	Loaded	Unloaded	1988	1987	1986
NEWFOUNDLAND	4 362.0	4 450.3	512.3	2 381.2	11 705.8	6 259.3	5 093.3
St. John's	29.9	21.4	187.6	760.1	999.0	827.6	871.1
Holyrood	0.3	439.9	18.6	153.0	611.8	795.6	511.4
Long Harbour	242.1	497.8	17.7	—	757.6	529.7	709.2
Corner Brook	203.8	64.8	12.0	273.8	554.4	570.0	504.7
Botwood	208.4	13.6	—	114.8	336.8	451.0	405.3
PRINCE EDWARD ISLAND	67.0	20.8	0.2	627.6	715.6	637.6	494.2
Charlottetown	3.7	17.6	0.2	428.2	449.7	436.4	570.2
NOVA SCOTIA	11 422.1	6 350.7	4 149.5	2 021.8	23 944.1	22 822.3	20 287.7
Halifax	5 304.3	6 053.1	2 442.0	980.1	14 779.6	15 081.5	13 485.1
Sydney	907.1	199.7	350.9	515.5	1 973.2	1 418.2	1 263.6
Port Hawkesbury	2 202.0	40.0	87.1	118.0	2 447.1	1 834.6	1 670.3
NEW BRUNSWICK	6 574.1	7 905.2	1 404.0	778.7	16 662.0	14 792.1	13 518.0
Saint John	5 598.8	7 331.7	1 392.1	373.8	14 696.1	12 987.8	11 939.8
QUEBEC	51 951.8	24 775.3	15 237.3	19 789.1	111 753.5	107 386.7	101 334.3
Sept-Îles	16 277.5	978.6	4 814.7	972.3	23 043.2	19 647.8	20 688.7
Port-Cartier	17 877.7	1 102.6	1 556.9	1 940.1	22 477.5	23 119.7	19 337.7
Montreal	6 017.6	8 564.3	1 759.1	5 490.0	21 831.0	21 436.1	20 826.5
Baie-Comeau	3 006.2	1 629.0	396.1	1 942.6	6 974.1	5 358.1	7 401.8
Sorel	1 840.4	485.5	53.1	3 061.5	5 440.6	5 972.5	5 673.4
Quebec-Lévis	4 598.1	7 040.3	2 341.2	3 750.0	17 729.6	18 261.6	12 052.3
Port-Alfred	171.5	3 477.1	—	137.7	3 786.5	3 155.6	3 010.8
Havre Saint-Pierre	318.6	—	2 495.9	6.8	2 821.3	2 814.0	2 406.8
Trois-Rivières	928.1	293.6	22.9	793.4	2 038.0	2 290.7	2 759.5
ONTARIO	11 243.0	28 230.7	22 625.3	18 241.5	80 340.5	75 630.5	70 564.8
Thunder Bay	3 494.7	278.1	13 158.5	379.9	17 311.2	19 354.5	17 687.3
Hamilton	648.7	6 324.7	374.2	5 585.4	12 933.2	10 934.8	10 413.8
Nanticoke	122.1	6 108.0	290.7	3 179.2	9 700.1	8 802.8	8 026.7
Sarnia	1 139.5	3 165.3	1 569.2	577.6	6 451.6	5 546.8	5 300.9
Sault Ste Marie	228.2	4 698.0	540.3	428.8	5 895.4	5 337.9	4 642.8
Windsor	951.6	1 059.0	989.4	1 170.5	4 170.5	3 485.0	3 588.7
Clarkson	329.6	242.1	111.8	2 354.4	3 038.1	3 401.0	3 161.4
Toronto	90.2	643.4	18.0	875.9	1 627.5	1 886.0	1 860.2
Goderich	1 184.0	—	758.4	258.8	2 201.2	1 904.9	2 037.2
Port Colborne	715.6	129.7	16.1	352.1	1 213.5	1 140.3	3 300.6
Picton	619.0	282.6	414.4	70.2	1 316.0	1 191.6	1 143.8

12.15 CARGOES LOADED AND UNLOADED AT PRINCIPAL CANADIAN PORTS, BY PROVINCE, 1988, WITH TOTALS FOR 1986-88 (THOUSAND TONNES) (concluded)

Province and port	International		Coastwise		Total		
	Loaded	Unloaded	Loaded	Unloaded	1988	1987	1986
MANITOBA	50.1	—	27.3	—	77.4	585.5	633.6
Churchill	50.1	—	27.3	—	77.4	585.5	633.6
BRITISH COLUMBIA	84 977.4	7 146.2	26 004.1	25 988.6	144 116.5	133 518.9	114 927.7
Vancouver	61 973.7	3 980.9	2 176.9	2 186.8	70 318.4	64 629.9	57 215.4
Prince Rupert	12 016.4	32.3	311.9	297.6	12 658.1	13 805.2	10 577.7
New Westminster	868.8	1 442.6	1 246.0	2 254.7	5 812.2	4 341.6	4 755.1
Howe Sound	—	—	2 555.5	5 566.5	8 122.0	8 002.3	4 854.5
North Arm Fraser River	46.4	3.8	2 455.6	2 926.3	5 432.1	4 681.5	3 316.4
Nanaimo	1 162.9	112.9	100.3	1 285.5	2 661.7	2 648.5	2 337.5
Crofton	920.3	72.7	169.1	1 439.5	2 601.6	2 165.9	1 864.4
Campbell River	800.6	40.5	516.0	302.6	1 659.7	1 524.7	1 894.3
Kitimat	1 885.9	735.0	251.5	109.1	2 981.5	2 509.9	2 088.6
Powell River	314.1	130.8	443.4	438.2	1 326.5	13 878.2	1 720.0
Port Alberni	545.5	94.6	181.4	184.6	1 006.1	972.9	639.1
NORTHWEST TERRITORIES	416.6	32.3	13.1	145.6	607.6	531.2	239.9
Total, all Canadian ports	171 064.4	78 911.8	69 974.0	69 974.0	389 924.3	362 164.0	327 584.9

12.16 VESSELS AND TONNAGE HANDLED BY CANADA PORTS CORPORATION, 1989

Port	Vessel arrivals		Cargo handled '000 t	Grain elevator shipments '000 t
	No.	Gross register tonnage '000		
St. John's	979	3,439	977	—
Halifax	2,163	37,881	16 784	457
Saint John	1,518	19,530	14 702	90
Belledune	39	395	393	—
Sept-Îles	696	16,182	23 302	—
Chicoutimi	94	614	484	—
Baie-des-Ha! Ha!	206	2,842	3 857	—
Quebec	952	13,737	15 668	1 813
Trois-Rivières	488	3,640	1 584	428
Montreal	2,431	28,450	20 423	1 209
Prescott	23	362	289	239
Port Colborne			45	108
Churchill	26	272	320	292
Vancouver	9,409	71,984	64 025	9 624
Prince Rupert	1,705	13,352	11 332	3 475
Total	20,729	212,680	174 185	17 735

12.17 SUMMARY STATISTICS OF ST. LAWRENCE SEAWAY TRAFFIC, 1989

Traffic, revenue and commodity	Montreal-Lake Ontario section			Welland Canal section		
	Tonnes and transits	% of total	Percentage change from 1988	Tonnes and transits	% of total	Percentage change from 1988
Cargo tonnes by toll classification						
Bulk	21 010 319	56.7	3.0	24 387 306	61.1	1.1
Grains	11 448 020	30.9	−26.0	12 094 818	30.3	−24.7
Government aid	168 750	0.4	93.0	151 603	0.4	79.8
Containers	31 728	0.1	−18.3	16 644	—	−29.1
General cargo	4 411 553	11.9	−3.4	3 259 079	8.2	0.4
Total, cargo tonnes	37 070 370	100.0	−8.6	39 909 450	100.0	−8.3
Traffic revenue ($) by toll classification						
Bulk	18,170,250	49.1	8.1	10,410,091	33.3	5.7
Grains	6,181,117	16.7	−23.1	5,231,970	16.8	−21.8
Government aid	—	—	−100.0	—	—	−100.0
Containers	27,408	0.1	−15.5	7,323	—	−25.8
General cargo	9,460,333	25.6	1.3	2,313,798	7.4	4.8
Gross registered tonnage	3,092,111	8.4	1.2	4,923,146	15.8	−1.7
Other	34,841	0.1	—	20,616	0.1	19.3
Lockage fees	—	—	—	8,311,312	26.6	−6.4
Total, traffic revenue	36,966,060	100.0	−1.1	31,218,256	100.0	−4.5
Gross registered tonnage						
Cargo vessels	34,967,602	99.5	−9.8	45,562,461	99.6	−10.6
Non-cargo vessels	172,246	0.5	−7.8	172,977	0.4	−7.3
Total, gross registered tonnage	35,139,848	100.0	−9.8	45,735,438	100.0	−10.6
Vessel transits						
Loaded cargo vessels	2,073	74.9	−10.4	2,243	62.3	−9.1
Ballast cargo vessels	463	16.7	−18.5	1,042	29.0	−13.3
Non-cargo	232	8.4	−10.8	313	8.7	31.0
Total, vessel transits	2,768	100.0	−11.9	3,598	100.0	(8.0)
	Tonnes	% of total	Percentage change from 1988	Tonnes	% of total	Percentage change from 1988
Agricultural products						
Wheat	7 040 862	19.0	−33.4	7 275 515	18.2	−32.5
Corn	2 049 926	5.5	−8.2	2 287 454	5.7	−6.1
Rye	25 383	0.1	55.6	25 383	0.1	55.6
Oats	18 525	0.1	−42.5	18 525	0.1	−48.4
Barley	1 229 637	3.3	10.2	1 232 637	3.1	9.2
Soybeans	676 398	1.8	−5.5	738 445	1.9	−3.4
Flaxseed	236 815	0.6	−8.3	236 815	0.6	−8.3
Other grains	333 446	0.9	−37.9	411 176	1.0	−37.7
Total, grains	11 610 992	31.3	−25.0	12 225 950	30.7	−24.0
Other agricultural products	58 008	0.2	2.6	57 518	0.1	−1.8
Total, agricultural products	11 669 000	31.5	24.9	12 283 468	30.8	−23.9

12.17 SUMMARY STATISTICS OF ST. LAWRENCE SEAWAY TRAFFIC, 1989 (concluded)

Traffic, revenue and commodity	Montreal-Lake Ontario section			Welland Canal section		
	Tonnes and transits	% of total	Percentage change from 1988	Tonnes and transits	% of total	Percentage change from 1988
Mine products						
Iron ore	11 185 264	30.2	3.5	7 293 840	18.3	3.0
Coal	776 999	2.1	9.0	6 321 198	15.8	−10.1
Coke	1 272 068	3.4	−13.3	1 412 270	3.5	−13.8
Stone, ground, crushed, or rough	448 647	1.2	3.7	1 187 261	3.0	17.8
Salt	1 377 273	3.7	34.0	2 176 005	5.5	30.1
Other mine products	1 714 419	4.6	−3.1	1 686 797	4.2	1.6
Total, mine products	16 774 670	45.2	3.4	20 077 371	50.3	−0.1
Processed products						
Iron and steel	4 186 116	11.3	(3.0)	3 092 769	7.7	1.9
Fuel oil	569 627	1.5	(35.2)	637 605	1.6	−4.8
Other petroleum products	652 248	1.8	55.9	454 106	1.1	58.7
Chemicals	819 447	2.2	(21.0)	864 621	2.2	7.9
Other processed products	2 279 901	6.2	11.9	2 428 795	6.1	−1.1
Total, processed products	8 507 339	23.0	−2.1	7 477 896	18.7	3.2
Miscellaneous cargo						
Forest products	47 967	0.1	58.7	35 159	0.1	68.7
Animal products	71 394	0.2	−2.8	35 556	0.1	−5.7
Total, miscellaneous products	119 361	0.3	15.1	70 715	0.2	20.8
Total, all commodities	37 070 370	100.0	−8.6	39 909 450	100.0	−8.3

Sources

Canada Ports Corporation.
St. Lawrence Seaway Authority.
Statistics Canada.

Chapter 13

Canadian Space Agency

SCIENCE AND TECHNOLOGY

13.1 INTRODUCTION

SCIENCE AND TECHNOLOGY (S&T) refers to a range of innovative projects designed to introduce and apply new scientific knowledge. It can encompass anything from creating new telephone systems to devising better tests for water quality. In Canada, S&T stimulates regional and national economic growth by encouraging the development of natural resources and industrial processes. The federal and provincial governments, industry, and universities all fund and perform various S&T ventures, which include research and development (R&D) and related scientific activities (RSA). Research and development is creative work that increases the store of scientific knowledge; related scientific activities complement and extend R&D. Both types of S&T are conducted in two major fields: natural sciences and engineering, and social sciences and humanities.

In the past, the federal government was the main participant and source of funding in Canadian research and development; today, its role is changing. While the federal government is still active in R&D, the private business sector has become the major funding source in Canada. Budget cutbacks in government departments that focus on R&D have led Canadian industry to increase its portion of R&D funding to remain competitive in a global market. In 1990, 42% of the Gross Domestic Expenditure on Research and Development, or GERD, was provided by the business sector, an increase of 15% from 1971.

13.2 FEDERAL RESOURCES

Due to the strong federal presence in the National Capital Region, 35% of the federal government's S&T funding is concentrated there, making Ontario the largest recipient with 54% of total expenditures; Quebec follows with 19% of funding, and British Columbia is third with 7%. These proportions remained identical from 1986 to 1990. Total expenditures for S&T were estimated at about $5.5 billion in 1990-91, representing 3.7% of the government's total spending, an increase of almost 6% from 1989-90. Over 60 federal departments and agencies receive funds to support departmental missions, and to aid industrial development through in-house (intramural) activities and by funding S&T in the private sector (extramural). Research in universities is funded primarily through three governmental granting councils: the Natural Sciences and Engineering Research Council, the Medical Research Council and the Social Sciences and Humanities Research Council.

Approximately 33,700 people carried out the government's S&T activities in 1990-91, a slight drop from the previous year. Environment Canada, Statistics Canada, Agriculture Canada, and the National Research Council were the largest employers.

In the natural sciences (such as biology, chemistry, and physics) and in engineering, estimated expenditures were $4.2 billion in 1990-91, with $2.9 billion (70%) for R&D and $1.3 billion (30%) for RSA. Most of the RSA expenditures ($612 million) were for data collection, from the monitoring of acid rain to wildlife surveys. About 46% of the R&D expenditures were for

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R. Meldrum Stewart, dominion astronomer from 1924-46. The Dominion Observatory, in Ottawa's Central Experimental Farm, opened officially in April, 1905, and was used for astronomical observations until 1970, by which time the growth of the city, and its increased lighting at night, had reduced the observatory's effectiveness.

intramural activities, 26% for R&D performed by industry, and 22% for R&D performed by universities. The remaining R&D expenditures were made by private non-profit organizations, provincial and municipal governments, other Canadian organizations, and foreign organizations funded by Canada.

Since 1984-85, total S&T expenditures in natural sciences and engineering have increased by almost 29%, with R&D expenditures increasing by 28%, and RSA expenditures by 30%.

The social sciences and humanities comprise disciplines that study human actions and the social, economic, and institutional mechanisms affecting these actions. Estimated expenditures in this field were $1.3 billion in 1990-91, with 81% for RSA and 19% for R&D. Approximately 77% of RSA expenditures were spent intramurally, with the bulk being used by Statistics Canada for data collection. In R&D, 30% of expenditures were intramural, with 33% going to universities through the Social Sciences and Humanities Research Council.

13.3 RESEARCH AND DEVELOPMENT

NATIONAL EXPENDITURES ON R&D

Research and development expenditures in 1990 were expected to be approximately $9.1 billion, almost 6% more than the estimated total for 1989.

R&D expenditures are an important indicator of creative activity in science and technology. This activity leads to new products and processes necessary for economic and industrial growth. This is particularly true of R&D in the business enterprise sector, but R&D expenditures in other sectors can also be a useful indicator of Canada's contribution to world science, the intellectual activity of Canadian institutions, and the search for solutions to Canadian problems.

Total R&D expenditures within a country are represented by the Gross Domestic Expenditure on Research and Development, or GERD. Calculated by adding up the intramural expenditures of institutions performing R&D, the GERD includes all R&D performed in Canada, even if it is funded from abroad. However, if R&D is funded by Canada, but performed abroad, then it is not included in the GERD.

The information collected to determine the GERD is grouped into sectors and sub-sectors so comparisons can be made. For example, the data can be used to construct an expenditures matrix comparing sectors performing R&D and those funding it.

CANADIAN INDUSTRY MOVES TO THE FOREFRONT

Over the past few decades, Canadian industry has moved to replace the federal government as the major source of R&D funding in Canada. Total expenditures on research and development in Canadian industry were expected to reach their highest level ever in 1990, at almost $5.1 billion, or 56% of the GERD. The business sector's participation in GERD (natural sciences and engineering only) has increased 21% since 1971. Correspondingly, the federal government and university shares have fallen from 29% and 31% to 17% and 23%, respectively.

Because R&D is generally not productive in the short term, it can be viewed as a burden on industry rather than a direct production cost. The simplest way of measuring the effort industry is making is to monitor the amount of self-financed R&D. In 1990, industry funded 42% of the GERD, a 15% increase since 1971. The business sector's role in industrial R&D expenditures includes private enterprises, such as Northern Telecom, as well as public enterprises, such as the Pulp and Paper Research Institute of Canada.

Although R&D is also performed by the government and universities, industrial R&D is most clearly linked to technological innovation and therefore to economic growth; but Canada does not rely on domestic R&D alone for new ideas and innovation. A great deal of information comes from abroad in the form of new machinery and equipment, the research of scientists and engineers reported in scientific and technical journals, and through designs, drawings, tooling and

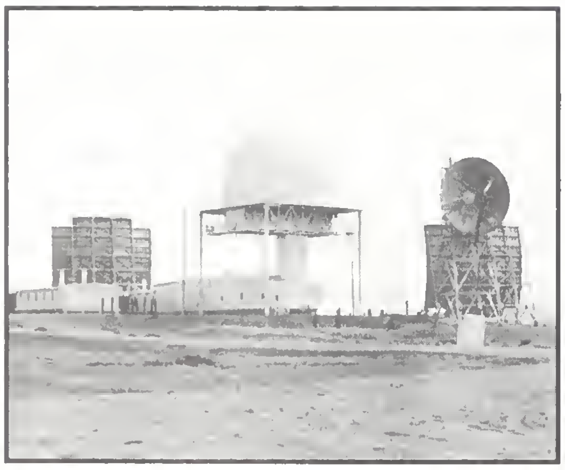
THE DEW LINE

During the Cold War, Canada and the United States joined forces to protect North America from possible air attacks.

In 1954, they began planning the Distant Early Warning (DEW) Line, a highly advanced radar system stretching along the Arctic coast from Alaska to Baffin Island. Any unidentified aircraft flying over the vulnerable northern polar regions would be detected by the DEW Line and reported to the North American Aerospace Defence Command.

Canadian companies built the system and the US paid for it. The ice and cold temperatures made construction difficult, but the system was completed on schedule in 1957.

Today, the DEW Line monitors commercial aviation, supplies radar advisory services and operates and maintains facilities for a worldwide communications network.



David Oancia/National Archives of Canada/PA-145816

Arctic DEW Line Station, 1972.

manufacturing specifications. It is usually more efficient to acquire the results of R&D performed by others than to duplicate the research. However, some indigenous R&D is necessary, not only to ensure that new inventions are appropriate to Canadian manufacturing and marketing conditions, but also to make sure that foreign R&D can be properly assimilated into our production processes. Domestic R&D is thus part of becoming effective imitators and adaptors.

Although Canadian industry is supporting more R&D, less than 1% of Canadian firms actually perform R&D, and industrial R&D is concentrated in an even smaller number of companies. Of Canada's 3,500 companies performing R&D, about 1% accounted for almost half of the total. This concentration means that the decisions of a few firms can significantly alter overall R&D expenditures, particularly in specific industry sectors. From 1986 to 1990, six major industries accounted for 50% of all R&D expenditures: telecommunications equipment; aircraft and parts; engineering and scientific services; business machines; computer services; and wells and petroleum products. Consequently, private sector R&D decisions are affected by government policy on defence, transportation and communications, as well as by national and international economic trends.

More than half of the industrial R&D workforce is concentrated in two areas of industry. Electrical and electronic products employs 32% of all industrial R&D personnel, with various services employing another 29%. Within various services, engineering and scientific services is the largest employer, with 31% of total personnel in this field.

About 58% of all R&D activity takes place in Ontario, and more than 88% of the telecommunication industry's R&D is also performed there. Some companies specialize in specific forms of R&D. For example, 10% of firms performing R&D reported energy R&D expenditures for 1988. Accounting for more than 28% of all industrial R&D, these firms spent $560 million on intramural energy R&D. Most of this (31%) was spent in the crude petroleum and natural gas industry and in the refined petroleum and coal products industry. In addition, the same companies spent $708 million in non-energy R&D, for total intramural outlays of $1.27 billion. Sixty-seven per cent of all intramural energy R&D expenditures are funded by the companies that perform the R&D; only 6% are government funded. However, government funding accounted for 12% of the funds spent on conservation energy R&D.

As a result of a recent initiative, an R&D performance measure now helps identify software development in Canadian industry. In 1988, 1,271 companies performed $1.02 billion in software development, about 23% of total R&D. Manufacturing companies performed 67% of all software R&D, with 44% concentrated in telecommunications and other electronic equipment. (For more details on R&D expenditures, refer to Tables 13.3 through 13.6.)

FEDERAL SUPPORT TO INDUSTRY

As the private sector's role in S&T broadens, the federal government is aiding industry through a multi-faceted industrial development program. The program assists industry through direct payments in the form of contracting government S&T, and by contributing to projects. The government also provides testing facilities on a cost-recovery basis and tries to create a favourable climate for the business sector through tax, tariff, trade and procurement policies. Government contracts for R&D were estimated at $308 million for 1990-91, with the Department of National Defence, Transport Canada and Atomic Energy of Canada Limited accounting for about half of the total.

R&D grants and contributions to industry were estimated at $467 million for 1990-91, with 47% coming from the Department of Industry, Science and Technology. The Department's two major programs are the Defence Industry Productivity Program (DIPP), which assists the defence sector of the high technology industry, and the Industrial Regional Development Program (IRDP).

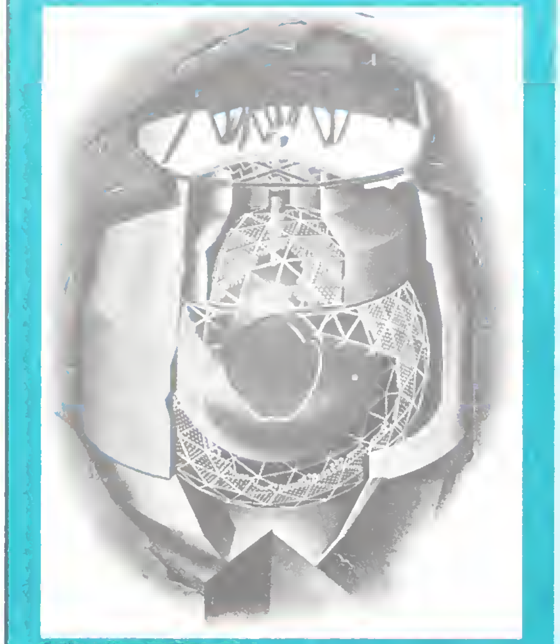
The National Research Council (NRC) also supports industry, mainly through its Industrial Research Assistance Program (IRAP).

AN ARM IN SPACE

Canadarm is the remote manipulator system designed and made in Canada for the US Space Shuttle. About 15 metres long by 0.4 metres in diameter, it enables NASA astronauts to take satellites from their orbiter's cargo bay and position them accurately in space. Canadarm is also designed to grapple satellites already in orbit and place them in the cargo bay for return to earth. Operated by two hand controls from the comfort of the ship's cabin, Canadarm is one of the most advanced robots in existence.

Canadarm was developed by the National Research Council of Canada in co-ordination with Spar Aerospace Ltd. of Toronto, and made its space debut in 1981 on the second flight of the orbiter *Columbia*. It has since been tested and used extensively on subsequent flights. The initial $100 million system was donated by Canada to the US space program; new Canadarms are being sold to NASA for about $25 million each.

Canadian Space Agency



Sudbury Neutrino Observatory

Graphic drawing of Sudbury Neutrino Observatory detector.

SUDBURY NEUTRINO OBSERVATORY

An observatory that will study the sun and stars from two kilometres underground is under construction near Sudbury, Ontario.

Scheduled for operation in late 1994, the Sudbury Neutrino Observatory promises to uncover secrets about the sun and stars, and the nature of energy, matter and the universe itself.

The observatory is designed to detect neutrinos and will be the largest and most sensitive neutrino observatory in the world — vastly more powerful than observatories in the United States and Japan.

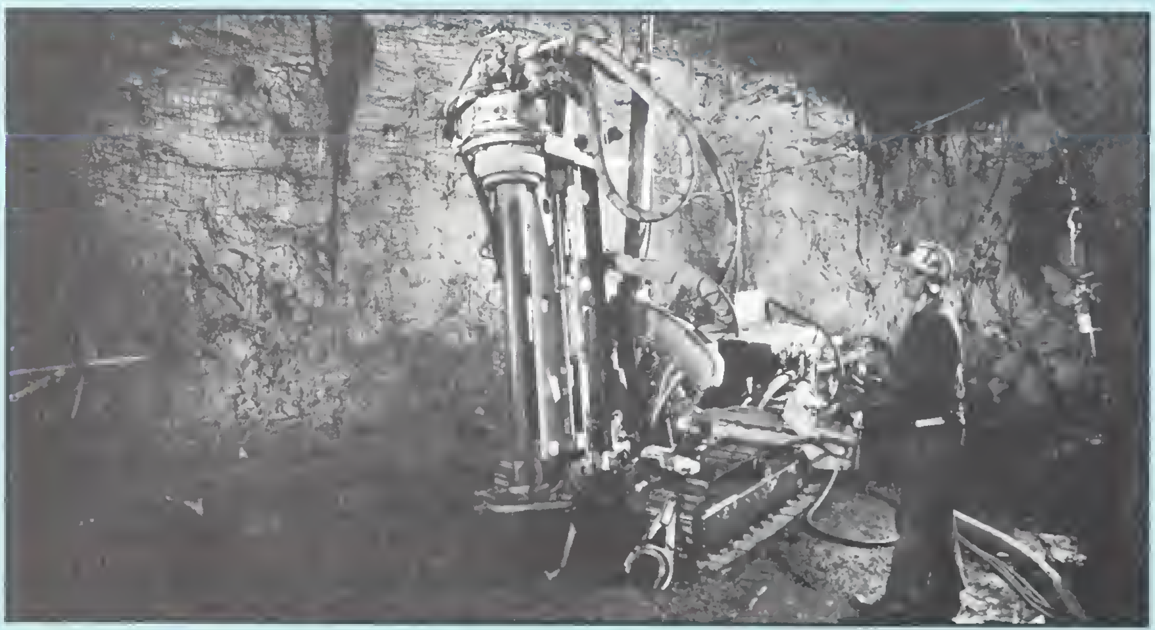
Neutrinos — elementary particles released from the core of the sun and other stars — are hard to detect and observing them requires a laboratory with very little radioactive interference. The Sudbury observatory with its deep-underground site, will allow the ground to act as a natural filter for the cosmic radiation continuously striking the earth's surface.

Much remains to be learned about neutrinos — trillions of which strike the earth every second — and scientists think they may hold the key to explaining the basic forces of nature. What **is** *known is that neutrinos travel fast — they are emitted from stars at or about the speed of light — and that there are three types which can pass through virtually all types of matter almost unscathed. A key question for scientists is whether neutrinos have mass or if they are energy bundles without mass — something the neutrino observatory should be able to verify.*

The observatory's design is relatively simple. At its heart, a huge plastic bottle containing 1 000 tonnes of heavy water will detect neutrinos as they pass through the earth. Heavy water — similar to ordinary water but with a slightly different atomic structure — is the best medium for neutrino detection since all neutrino types react with it.

Successful detection of neutrino mass holds many implications. It may support the theory that the universe is expanding and may tell us much about the future of the universe. Because neutrinos stream directly out of the cores of stars, studying them may also explain how the sun and stars operate as giant furnaces.

Undertaken anywhere else in the world, the Sudbury observatory would cost about $500 million. However, unique circumstances in Canada have allowed construction to proceed with about $50 million in funding from the federal and Ontario governments and from the United States Department of Energy. Many of the goods and services are being provided at cost or on loan. For instance, the heavy water required — valued at some $300 million — is on loan from Atomic Energy of Canada Limited (AECL), a Crown corporation which maintains the largest heavy water reserves on earth for use in CANDU nuclear reactors. And INCO, a mining company, is donating the dormant mine — worth about $150 million — and providing engineering and mining services at cost.



Sudbury Neutrino Observatory

A rock drill operator at the underground site of the Sudbury Neutrino Observatory.

13.4 THE FEDERAL ROLE

Although R&D is shifting to the private sector, the federal government still plays a major role in scientific and technological activities. Five federal departments and agencies fund 54% of S&T in the natural sciences and engineering, and another five provide funding for 63% of S&T activities in the social sciences and humanities. These departments and agencies fund activities ranging from industrial development to researching global social problems.

National Research Council With estimated expenditures of $566 million in 1990-91, the NRC spends more on S&T than any other federal department. However, NRC spending has grown only 3.1% since 1984-85 as a result of major budget reductions in 1984 and 1986, and general restraint in subsequent years.

In 1990-91, an estimated 72% of the NRC's budget was spent intramurally, 19% was spent in the industrial sector, and 6% in universities. In 1989-90, 53% of the Council's resources supported the national science and technology infrastructure, 28% was devoted to R&D, and 19% was earmarked for industrial partnerships. These latter efforts help Canadian industry increase technical competence, improve productivity, develop new products, and solve technical problems in areas such as transportation, construction, biotechnology, manufacturing systems and industrial materials. Through its Industrial Research Assistance Program (IRAP), Canada's only national technology network, the NRC contributed $74 million to industry in 1990-91. By providing technical advice, it helped thousands of firms develop world-class technology. In 1988-89, the NRC-operated Industry Development Office (IDO) also provided $65 million in grants and contributions to industry through support programs.

The NRC maintains national scientific and engineering facilities that are used by scientists and engineers in industry, universities and government. In collaboration with these experts, the NRC has made important advances ranging from a promising new technique for identifying cancer in its earliest stages to creating the most reliable bomb "sniffer" ever developed. The NRC is also the largest scientific and technical information service in the country. Its Canada Institute for Scientific and Technical information responds to nearly half a million information requests annually.

Statistics Canada is the largest spender on social sciences and humanities, with estimated expenditures of $349 million in 1990-91. As the statistical agency of the federal government, Statistics Canada collects and disseminates statistical information needed for understanding Canada's economy and institutions and for developing economic and social policies and programs.

The Canadian International Development Agency (CIDA) CIDA provides Official Development Assistance (ODA) to developing countries to help them achieve self-sustainable development. The Agency spent an estimated $152 million on social sciences and humanities S&T in 1990-91, approximately 41% of its total science budget. The balance of CIDA's science expenditures were devoted to natural sciences and engineering.

Environment Canada The federal department of the environment supports S&T in the natural sciences and engineering, and in social sciences and the humanities. The department is the second largest S&T spender in natural sciences and engineering, with estimated spending of $472 million in 1990-91. Approximately 89% of the total is spent in Environment Canada's own laboratories, with 82% devoted to RSA (primarily data collection), and 18% earmarked for R&D.

Environment Canada's main concerns are the atmospheric environment, environmental conservation and protection, and Parks Canada. The department operates a series of laboratories across the country to deal with regional and national environmental concerns. The atmospheric environment service provides historical, current and predictive meteorological, sea-state and ice information for all areas of Canada. In 1990-91, the service received approximately 61% of the department's S&T expenditures. Environmental conservation and protection S&T, allotted 37% of the total budget, includes water resources development, water quantity and quality research, hydrometric data collection, and development of inventories of land capability and use.

Environment Canada's expenditure in the social sciences and humanities in 1990-91 were estimated at $76 million, with 70% of this going to the Parks program. Approximately 96% of expenditures in this field went to RSA.

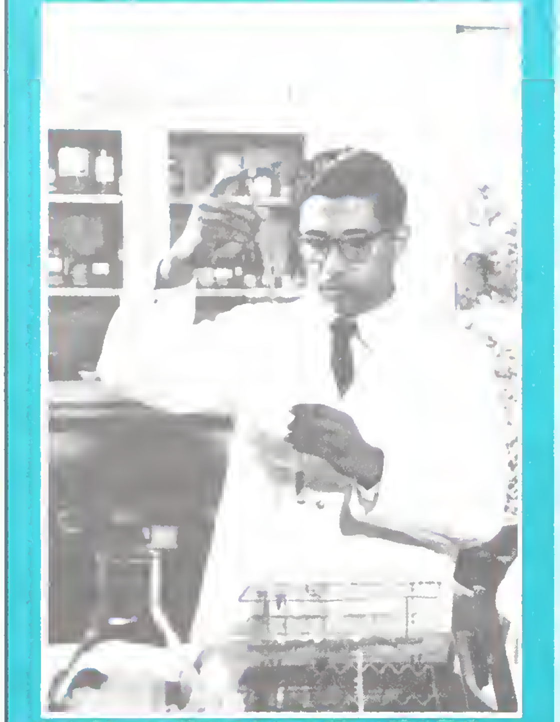
WIND TUNNELS

Canada has a world-class capability for aeronautical and industrial testing through its wind tunnels, run by the Applied Aerodynamics Laboratory of the National Research Council. Located near the Ottawa International Airport, the wind tunnels can be used for a wide range of aerodynamic testing at wind levels of up to 3 600 km/hr.

Since the commissioning of the first two tunnels in 1940 and the large tunnel in 1970, these facilities have been used extensively by Canadian and foreign industries for the direct testing of all types of vehicles from buses to bicycles, and the testing of an immense variety of scale models including buildings, bridges, ocean platforms, towers, antennas, ships, helicopters, submarines, and airplanes. The facilities can be used to test any number of wind engineering factors, from surface pressures to stability, and from fuel-efficiency to aerodynamic noise.

One of the more prominent projects developed by the Laboratory was the Vertical-Axis wind turbine that has been used in the construction of a 4 megawatt wind energy installation now operating commercially on the south shore of the St. Lawrence River, near Quebec City.

THE DOMINION EXPERIMENTAL FARMS



Dept. of Agriculture/National Archives of Canada/PA-147417

Central Experimental Farm laboratory scene, 1956.

Before 1886, a farmer had to rely on intuition or neighbours for solutions to agricultural problems.

Whether it was insects or disease, there were few places for farmers to turn, until Parliament established the Dominion Experimental Farms in 1886. Experimental farms began in Europe when modern chemistry emerged; and Canada's farms were founded to create a national core for agricultural science, which had previously been left to farmers' clubs and provincial agencies. The practical help offered by the experimental farms was a crucial factor in the settlement and development of the West.

Originally, five farms were planned, one for each geographic region, but the system has expanded to more than 40 experimental farms and research stations. Different divisions conduct agricultural research in a range of fields such as animal husbandry, bees, cereals, plants, poultry and tobacco.

A Central Experimental Farm is situated in Ottawa, with branch stations in important agricultural regions, and sub-stations in areas where specific problems can be studied.

Many of the early Experimental Farms staff were practical farmers, not trained researchers or scientists, but they taught themselves the skills they needed. Angus Mackay (1841-1931) was the son of a farmer and a farmer himself. In 1888, Mackay became the superintendent at Indian Head, the first experimental farm in the West.

Mackay is recognized for what is considered the most important development in the history of cultivation in the Western Prairies. Summer fallow, or the practice of leaving land uncultivated for a year so the earth can store moisture, made the West a rich agriculture resource.

Energy, Mines and Resources Canada (EMRC) expected to spend about $406 million on S&T in 1990-91 — 66% intramurally, and 28% in the industrial sector. EMRC operates numerous laboratories across Canada and is responsible for geological surveys, mapping, developing R&D policies to support national energy options, and management and technical evaluation of the government's energy R&D program. (See Chapter 17, Mines and Minerals, for more information on EMRC's activities.)

Agriculture Canada In 1990-91, the federal department of agriculture spent an estimated $344 million on natural sciences and engineering S&T, with 90% devoted to R&D. Most of the department's expenditures were intramural; only 2% were given to the industrial sector, while 4% went to universities and other sectors.

The Research Branch conducts the bulk of the department's S&T activities through research units across Canada that specialize in local problems. In addition, Agriculture Canada operates six national research centres that conduct research on soil properties, forestry, water use and water management, energy use, environmental quality, production development including animal crossbreeding, feed lot systems, genetics, processing, distribution, retailing and consumer concerns.

National Museums of Canada The National Museums of Canada Corporation comprises the National Gallery of Canada, the Canadian Museum of Civilization, the Canadian Museum of Nature, and the National Museum of Science and Technology. It also operates a museum assistance program that provides funds to non-profit organizations for developing museum services.

The Corporation spent an estimated $122 million on the social sciences and humanities in 1990-91. These expenditures comprised 82% of the corporation's total budget, with the balance spent on natural sciences and engineering. The bulk of this expenditure was slated for museum services, but approximately 13% was for R&D.

University granting councils More than half (66%) of the R&D grants received by universities in 1990-91 came from Canada's three university granting councils: the Natural Sciences and Engineering Research Council, (NSERC), the Medical Research Council and the Social Sciences and Humanities Research Council (SSHRC). Total payments were an estimated $876 million, with 81% going to the natural sciences and engineering and 19% to the social sciences and humanities.

In 1990-91, NSERC provided an estimated $425 million in grants for natural sciences and engineering, a 36% increase since 1984-85. About 91% of NSERC's budget goes to Canadian universities; 2% goes to foreign research organizations, and the remainder is devoted to administration. The other council involved in natural sciences and engineering is the Medical Research Council, with 1990-91 expenditures of $222 million.

SSHRC, the granting council for the social sciences and humanities, had estimated expenditures of $90 million for 1990-91. Canadian universities receive about 77% of the council's budget, most of which is earmarked for R&D. The council gives grants to scholarly publications and major editorial projects, to career scholars, and to support international exchanges of scholars.

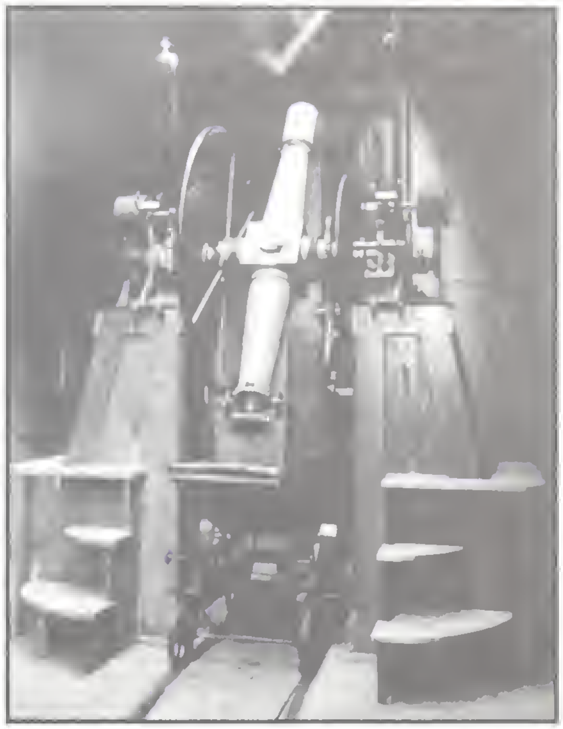
13.5 PROVINCIAL RESEARCH

Although relatively small in comparison to their federal counterparts, the research organizations established by Quebec, Ontario, Nova Scotia, New Brunswick and all four of the western provinces have had a substantial impact on industry in their respective provinces. The primary objective of these organizations is to provide technical support to local firms, and to assist in developing provincial natural resources. They research and test everything from nuclear reactors to pest control and wood stoves, and apply new technology to provincial industries.

In 1988, the total expenditure for all provincial research organizations was approximately $151 million, and total employment was about 2,000 people. Approximately 37% of funding comes from provincial government grants, while 31% comes from research contracts from the private sector.

The Alberta Research Council is the largest provincial research organization, with a 1988 budget of $45 million. Some of the provincial foundations, such as ORTECH, Ontario's research council, also run centres to apply the research they conduct. For example, ORTECH researches energy conservation and also runs a centre for alternate fuel use.

Source
Statistics Canada.


Dominion Observatory/National Archives of Canada/PA 107536

The 6-inch Troughton and Simms meridian circle telescope was used at the Dominion Observatory in Ottawa from 1910-1962 to chart the meridian crossings of specified "clock" stars in determining time. By 1930, about 700 clocks in Ottawa got their signals electrically from the observatory, and from 1941-70 the observatory supplied the official Canadian time signal. The time signal service has now been taken over by the Physics Division of the National Research Council.

FOR FURTHER READING
Selected publications from Statistics Canada

- *Science and Technology Indicators*, annual. 88-201
- *Industrial Research and Development Statistics (with estimates)*, annual. 88-202
- *Resources for Research and Development in Canada (with estimates)*, annual. 88-203. Discontinued. Last issue 1985.
- *Federal Scientific Activities*, annual. 88-204
- *Directory of Federal Government Scientific and Technological Establishments*, annual. 88-206
- *An Indicator of Excellence in Canadian Science*, 1985. 88-501
- *Patents as Indicators of Invention*, 1985. 88-504
- *Industrial Productivity and Research and Development Indicators*, 1984. 88-505

TABLES

LEGEND

..	*not available*	e	*estimate*
...	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

13.1 FEDERAL GOVERNMENT EXPENDITURES ON ACTIVITIES IN THE NATURAL SCIENCES AND ENGINEERING, BY DEPARTMENT OR AGENCY, 1985-86^{r} TO 1990-91^{e} (MILLION DOLLARS)

Department or agency	1985-86	1986-87	1987-88^{r}	1988-89^{r}	1989-90^{p}	1990-91^{e}
Agriculture	401.8	405.2	308.8	333.4	332.5	344.1
Atomic Energy of Canada Ltd.	140.1	170.8	138.7	125.1	139.8	123.6
Communications	76.2	65.2	61.5	54.8	46.0	52.2
Energy, Mines and Resources	387.9	397.4	383.0	380.1	369.6	516.7[1]
Environment	333.2	362.2	380.6	385.7	423.9	471.5
Fisheries and Oceans	237.8	212.4	200.7	207.6	236.9	228.6
Medical Research Council	161.6	168.3	175.1	189.1	202.4	222.0
National Defence	210.7	221.4	247.4	278.1	279.4	292.9
National Health and Welfare	84.3	90.7	98.8	118.9	128.6	133.3
National Research Council	423.9	468.2	481.8	515.3	568.3	499.6
Natural Sciences and Engineering Research Council	311.3	320.9	339.4	365.9	391.2	425.0
Industry, Science and Technology	199.2	188.1	216.9	242.4	294.4	262.5
Transport	36.5	30.0	29.5	31.6	36.1	37.3
Other	272.9^{r}	314.6^{r}	399.7	433.4	513.5	578.3
Total	3,004.5^{r}	3,415.4^{r}	3,461.9	3,661.4	3,962.6	4,187.6

[1] *In the 1990-91 EMR submission, $110 million was erroneously reported as "R&D grants and contributions to Canadian industry". These data will be changed in the 1991-92 report.*

13.2 FEDERAL GOVERNMENT EXPENDITURES ON ACTIVITIES IN THE SOCIAL SCIENCES AND HUMANITIES, BY DEPARTMENT OR AGENCY, 1985-86^{r} TO 1990-91^{e} (MILLION DOLLARS)

Department or agency	1985-86	1986-87	1987-88^{r}	1988-89^{r}	1989-90^{p}	1990-91^{e}
Employment and Immigration	26.8	39.3^{r}	64.6	61.5	64.9	163.3
Finance	16.6	18.6	20.4	20.4	22.3	31.5
International Development Research Centre	33.6	36.3	38.0	39.9	44.2	41.9
National Health and Welfare	30.4	32.7	43.6	50.6	59.1	56.8
National Library	42.1	45.2	45.4	47.2	49.5	49.9
National Museums	61.3	75.2	86.0	130.4	144.3	121.6
Public Archives	20.6	22.2	15.2	25.1	26.1	25.9
Secretary of State	8.0	6.7	7.1	4.3	4.5	4.5
Social Sciences and Humanities Research Council	63.7	70.6	70.7	76.4	82.1	90.0
Statistics Canada	262.7	360.7	287.0	288.1	292.3	349.2
Treasury Board	21.5	21.0	22.4	20.8	23.8	24.3
Other	275.1^{r}	304.8^{r}	343.6	389.9	378.7	403.1
Total	862.4^{r}	1,033.3^{r}	1,044.0	1,154.6	1,191.8	1,262.0

13.3 INTRAMURAL R&D EXPENDITURES, BY INDUSTRY, 1981-90 (MILLION DOLLARS)

Industry	1981	1982	1983	1984	1985[1]	1986[1]	1987	1988	1989^p	1990^p
Mining and oil wells										
Mining	51	48	43	48	51	51	46	46	51	58
Crude petroleum and natural gas	80	85	49	67	69	38	30	33	32	33
Total, mining and oil wells	131	132	92	115	119	90	76	79	84	91
Manufacturing										
Food, beverages and tobacco	56	71	69	71	79	90	87	87	91	93
Rubber and plastic products	20	20	18	19	21	23	22	22	21	23
Textiles	22	26	25	29	34	36	41	43	46	48
Wood	15	14	15	18	20	22	24	33	34	59
Pulp and paper	68	62	56	64	75	89	87	145	136	196
Primary metals (ferrous)	24	23	21	26	27	27	31	31	33	37
Primary metals (non-ferrous)	86	86	82	95	93	88	111	130	141	148
Metal fabricating	21	28	27	24	30	34	35	38	50	52
Machinery	80	88	78	71	77	90	80	82	86	92
Aircraft and parts	256	295	279	282	337	369	468	423	437	445
Other transportation equipment	66	70	86	85	99	111	127	199	207	222
Telecommunication equipment	275	349	457	528	611	621	686	715	706	703
Electronic parts and components	32	48	25	31	34	31	33	34	36	38
Other electronic equipment	76	105	148	188	256	282	289	298	306	334
Business machines	84	124	140	171	191	238	268	294	354	384
Other electrical products	58	73	78	73	78	75	68	64	64	65
Non-metallic mineral products	9	9	10	17	19	16	15	20	22	23
Refined petroleum and coal products	272	244	184	218	205	147	118	149	139	123
Drugs and medicines	52	58	66	63	81	103	107	133	192	214
Other chemical products	95	122	115	132	164	164	181	200	215	230
Scientific and professional equipment	18	21	25	33	42	51	54	51	53	55
Other manufacturing industries	16	21	16	19	30	41	37	36	38	45
Total, manufacturing	1,700	1,958	2,021	2,256	2,601	2,748	2,967	3,228	3,406	3,630
Services										
Transportation and other utilities	72	90	94	97	123	150	143	121	162	168
Electrical power	92	122	119	149	180	211	213	231	266	281
Computer services	27	38	58	94	146	195	219	212	219	231
Engineering and scientific services	81	105	143	206	281	360	356	356	358	383
Other non-manufacturing industries	23	42	57	77	159	195	242	265	280	299
Total, services	294	398	472	623	889	1,111	1,173	1,185	1,285	1,363
Total, all industries	2,124	2,489	2,585	2,994	3,610	3,949	4,216	4,492	4,775	5,083

[1] *Improved coverage and response have increased observed R&D expenditures by about 10% for these years.*

13.4 CURRENT INTRAMURAL R&D EXPENDITURES AS A PERCENT OF PERFORMING COMPANY SALES, BY INDUSTRY AND COUNTRY OF CONTROL OF PERFORMER, 1988

Industry	Percent of company sales		
	Canadian	Foreign	Total
Mining and oil wells			
Mining	0.6	0.5	0.5
Crude petroleum and natural gas	0.8	0.4	0.6
Total, mining and oil wells	0.6	0.4	0.5
Manufacturing			
Food, beverages and tobacco	0.2	0.6	0.3
Rubber and plastic products	1.3	0.2	0.5
Textiles	0.5	1.6	1.1
Wood	0.3	0.5	0.3
Pulp and paper	0.4	0.1	0.3
Primary metals (ferrous)	0.3	0.2	0.3
Primary metals (non-ferrous)	1.0	0.2	0.9
Metal fabricating	1.8	0.8	1.1
Machinery	3.3	1.5	2.6
Aircraft and parts	13.5	16.8	16.1
Other transportation equipment	4.1	0.2	0.5
Telecommunication equipment	17.8	11.6	17.0
Electronic parts and components	6.3	3.6	5.1
Other electronic equipment	16.1	9.4	11.3
Business machines	8.4	2.8	3.4
Other electrical products	2.1	1.2	1.4
Non-metallic mineral products	0.3	0.8	0.6
Refined petroleum and coal products	0.5	0.6	0.5
Drugs and medicines	9.5	3.1	4.0
Other chemical products	1.5	1.2	1.3
Scientific and professional equipment	11.2	1.1	2.5
Other manufacturing industries	2.3	0.7	2.0
Total, manufacturing	1.7	1.3	1.5
Services			
Transportation and other utilities	0.4	0.5	0.4
Electrical power	1.1	—	1.1
Computer services	12.5	10.0	12.3
Engineering and scientific services	14.5	42.0	16.5
Other non-manufacturing industries	1.7	0.7	1.1
Total, services	1.5	1.1	1.4
Total, all industries	1.6	1.2	1.4

13.5 ENERGY R&D EXPENDITURES, BY AREA OF TECHNOLOGY AND SOURCE OF FUNDS, 1988 (MILLION DOLLARS)

Area of technology	Intramural R&D expenditures				Payments outside Canada	Total
	Self-funded	Government sources	Other sources	Total		
Renewable resources						
Solar energy	1	1		2	—	2
Biomass energy	2	2	1	6	—	6
Wind energy	1	[1]	[1]	2	—	2
Other renewable resources	16	2	1	19	—	19
Transportation and transmission						
Transportation of energy commodities	6	1	4	11		11
Transmission and distribution of electricity	112	[1]	12	126	[1]	127
Conservation						
Domestic and commercial buildings	15	3	1	19	1	20
Vehicles and other transportation systems	25	[1]	[1]	34	8	43
Industrial processes	34	2	2	38	..	38
Other conservation	[1]	..	[1]	5		5
Fossil fuels						
Crude oils and natural gas						
Exploration and production (excluding enhanced recovery)	42	1	3	46	24	70
Production by enhanced recovery	7	[1]	[1]	15	[1]	18
Oil sands and heavy crude oils						
Surface mined	[1]	[1]	[1]	15	[1]	15
In-situ produced	23	4	[1]	[1]	[1]	38
Refining	49	[1]	[1]	57	21	78
Coal	11	3	1	15	..	15
Nuclear						
Fuel exploration, mining and preparation	[1]	[1]	[1]	[1]	[1]	
Energy generation	[1]	[1]	[1]	[1]	[1]	52
Other	57	1	4	62	34	96
Total	438	42	80	560	93	653

[1] *Confidential.*

13.6 SOFTWARE R&D EXPENDITURES, BY SELECTED INDUSTRIES AND EMPLOYMENT SIZE, 1988 (MILLION DOLLARS)

Selected industries	Employment size			
	1-49	50-99	>99	Total
Mining and oil wells	..	—	..	..
Manufacturing				
Machinery	2	1	3	6
Aircraft and parts	—	—	22	22
Telecomunication and other electronic equipment	3	3	441	447
Business machines	6	4	157	167
Other electrical products	1	1	9	11
Scientific and professional equipment	2	1	1	4
All other manufacturing industries	7	2	18	27
Total, manufacturing	21	12	651	684
Services				
Transportation and other utilities	2	—	17	19
Electric power	—	—	35	35
Computer services	61	37	53	151
Engineering and scientific services	25	6	37	68
Other non-manufacturing industries	21	2	36	59
Total, services	109	44	178	331
Total	130	57	830	1,017

13.7 NUMBER OF PERSONS ENGAGED IN R&D, BY INDUSTRY AND OCCUPATIONAL CATEGORY, 1988 (PERSON-YEARS[1])

Industry	Professionals	Technicians	Other	Total
Mining and oil wells				
Mining	210	235	55	505
Crude petroleum and natural gas	165	85	75	325
Total, mining and oil wells	375	325	130	830
Manufacturing				
Food, beverages and tobacco	590	435	260	1,285
Rubber and plastic products	135	90	75	300
Textiles	255	195	130	580
Wood	230	170	130	530
Pulp and paper	460	380	225	1,065
Primary metals (ferrous)	175	115	55	350
Primary metals (non-ferrous)	430	465	185	1,085
Metal fabricating	250	225	125	600
Machinery	505	495	215	1,215
Aircraft and parts	1,780	1,300	915	3,995
Other transportation equipment	980	745	910	2,635
Telecommunication equipment	4,415	1,325	1,335	7,075
Electronic parts and components	270	180	50	500
Other electronic equipment	2,590	1,030	350	3,970
Business machines	2,000	985	315	3,300
Other electrical products	525	370	85	980
Non-metallic mineral products	125	100	30	255
Refined petroleum and coal products	455	435	110	1,000
Drugs and medicines	665	295	180	1,145
Other chemical products	1,500	860	340	2,700
Scientific and professional equipment	435	290	95	815
Other manufacturing industries	310	230	95	640
Total, manufacturing	19,085	10,715	6,210	36,005
Services				
Transportation and other utilities	1,010	375	155	1,540
Electrical power	780	600	325	1,705
Computer services	1,820	1,115	345	3,280
Engineering and scientific services	2,560	1,430	700	4,690
Other non-manufacturing industries	2,195	1,425	505	4,125
Total, services	8,365	4,940	2,030	15,335
Total, all industries	27,820	15,980	8,370	52,170

[1] *Person-years are rounded to the nearest 5.*

Source
Statistics Canada.

Chapter 14

Department of National Defence/National Archives of Canada/PA 147102

INTERNATIONAL RELATIONS

14.1 INTRODUCTION

WITH CONFEDERATION IN 1867, Canada gained autonomy, but it was not until well into the 20th century that its independence from Britain was recognized internationally. Before the Department of External Affairs was established in 1909, Canada's negotiations with foreign countries were conducted through the British Foreign Office and dealings with other parts of the Empire were conducted through a colonial office. By the end of World War I, increased Canadian responsibilities abroad had led to expansion of services and representation. An agreement reached at the 1926 Imperial Conference granting Canada sovereignty in international negotiations and affairs was an important step in the evolution of Canada's international status.

In the 1920s, Canada established independent diplomatic relations with several countries, including the United States, France and Japan. By 1987, Canada had 115 diplomatic and consular missions in 82 countries. Canada also maintains diplomatic relations with 84 other countries, including 32 honourary consulates. In Ottawa, Canada's capital, 101 countries have diplomatic missions, and another 48 have non-resident accreditation.

In addition to foreign missions, Canada has permanent delegations at the United Nations (UN) in New York and Geneva. Canada also has permanent missions to various UN agencies including the United Nations Educational, Scientific and Cultural Organization (UNESCO), and to the Organization for Economic Co-operation and Development (OECD), the International Energy Agency, the Mutual and Balanced Force Reduction Talks, the North Atlantic Treaty Organization (NATO), the European Community, and the Organization of American States.

The federal government recognizes that each of Canada's provinces has unique interests. A federal-provincial co-ordination office at External Affairs Canada helps meet provincial objectives in international activities, provides assistance for certain provincial activities abroad, and keeps provinces informed of foreign developments and policy changes.

The responsibilities of External Affairs Canada have expanded over the years to incorporate the full spectrum of Canada's international relations, including foreign policy, trade, immigration and aid.

Today, Canada's status is reflected in its participation in international negotiations on such vital issues as human rights, the environment, disarmament, the law of the sea, energy management and nuclear non-proliferation.

Duncan Cameron/National Archives of Canada/PA 154665

President John F. Kennedy, Governor General Georges Vanier, Prime Minister John G. Diefenbaker, Mrs. Kennedy and Mrs. Diefenbaker, Ottawa, May 1961.

14.2 MULTILATERAL ACTIVITIES

CANADA AND THE COMMONWEALTH

Over the past century, the Commonwealth has gradually evolved into an association of 48 sovereign nations embracing approximately one-quarter of the earth's surface and one-fifth of its population. Comprising developed and developing countries, the Commonwealth is a unique association whose members share many traditions, political and social values, attitudes and institutions. The organization has no binding rules; decisions are made by consensus rather than by formal vote.

Membership in the Commonwealth and pursuit of its goals are important to Canadian foreign policy. In recent years, two issues have dominated Commonwealth concerns: the needs of the smallest and poorest member countries, and apartheid in South Africa.

The Commonwealth funds technical co-operation, a youth program, a scholarship and fellowship plan, and a science council. The Commonwealth of Learning, headquartered in Vancouver, promotes co-operation in education. This agency was founded in October 1987 at a Vancouver meeting of Commonwealth Heads of Government.

CANADA AND "LA FRANCOPHONIE"

Unlike the Commonwealth, "la Francophonie" is not an institutional arrangement. The term encompasses a community of countries sharing to varying degrees the French language and culture. These countries have formed an assembly of heads of state and government, and work together through intergovernmental institutions and various private organizations.

Like the Commonwealth, "la Francophonie" has become a forum for international problem-solving. It offers Canada an excellent framework for co-operation and dialogue with industrialized countries and with some of the poorest developing countries.

"La Francophonie" also promotes French culture in Canada by giving it an international dimension, and strengthens Canadian unity by involving provinces that have recognized French as an official language in international concerns. With the governments of Quebec and New Brunswick, Canada participates in the Agency for Cultural and Technical Co-operation (the main international francophone organization) and in two major francophone ministerial conferences — the conference of ministers of youth and sports, and the conference of ministers of education. Quebec and New Brunswick are also represented by their premiers at "la Francophonie" meetings of heads of state and government.

CANADA AND THE ECONOMIC SUMMITS

Every year, the leaders of the seven major industrialized democracies and the European Community hold an Economic Summit. Canada began participating in these summits in 1976; the European Community followed suit in 1977.

The Economic Summits foster personal contact among leaders, helping to bring about progress on world issues. Powerful enough to have a bearing on world economic and political developments and yet small enough for open and direct discussions, the summit groups develop economic policies to help balance global economic growth. Summits emphasize the inter-relationship of economic concerns — growth, employment, inflation, energy, debt and trade. This approach recognizes the close connection between the industrialized countries and the developing world.

W.L.M. King/National Archives of Canada/C-16768

President Franklin D. Roosevelt of the US visits Prime Minister William Lyon Mackenzie King, 1936.

CANADA AND THE OECD

Established in 1961, the Organization for Economic Co-operation and Development (OECD) brought Canada and the United States together with Western European countries in a major forum for consultation and co-operation among industrialized nations. Japan, Australia and New Zealand later joined the Organization.

The OECD works to achieve stability, balanced economic growth and social progress. Over the years, the OECD has broadened its scope to include almost every aspect of economic and social policy in modern society.

CANADA AND THE UNITED NATIONS

Ever since the inception of the United Nations in 1945, supporting the UN system has been an integral part of Canadian foreign policy. On January 1, 1991, Canada completed a two-year term on the UN Security Council. Canada has also played a significant role in the General Assembly and in a number of special committees.

When military forces have been dispatched under the UN flag to counter threats to peace and security, Canada has provided personnel and equipment.

Canada has also served at regular intervals on the Economic and Social Council. The Council discusses social, humanitarian and economic issues such as food shortages and international co-operation.

Canada has been prominent in UN efforts to promote and protect human rights, and currently serves on the UN Commission on Human Rights.

Canada is a major donor to the UN Fund for Drug Abuse Control, and will help draft a new international convention on illicit drug trafficking.

In 1987, Canada was the fourth largest contributor to the UN budget. In addition to assessed contributions, Canada makes voluntary contributions to the UN's development program, the high commission for refugees, the children's fund, the relief and works agency for Palestine refugees, the world food program, the educational and training program for southern Africa, the fund for population activities, the committee on racial discrimination, the trust fund for South Africa and the fund for drug abuse control.

Canada is a member of many specialized UN agencies that focus either on broad issues such as world health, nutrition and education, or on specialized areas of global interest such as aviation, meteorology and telecommunications.

CANADA AND DISARMAMENT

Canada participates in the principal multilateral forums on disarmament, including the United Nations First Committee and Disarmament Commission, the Conference on Disarmament and the new talks on confidence-building and conventional stability held in Vienna. Canada also pursues arms control through bilateral consultations with countries from the East and West, and with neutral and non-aligned states active in arms control and disarmament. Canada fully supports the objectives of the US/USSR negotiations on nuclear and space arms.

Canada's priorities include negotiations to radically reduce nuclear forces and increase strategic stability, strengthen nuclear non-proliferation, ban chemical weapons, prevent an arms race in outer space, and reduce military forces in Europe and elsewhere.

To help meet these goals, Canada encourages compliance with existing treaties, develops mechanisms for verifying compliance with these treaties and promotes trust between East and West. In February 1990, Canada hosted the first Open Skies Conference, attended by the foreign ministers of the 23 NATO and Warsaw Pact nations.

CANADA AND INTERNATIONAL TERRORISM

Canada helps fight terrorism through multilateral forums such as the Economic Summit, the International Civil Aviation Organization and the International Maritime Organization. Canadian terrorism experts exchange information with experts in other countries to improve detection and prevention of terrorist activities.

INTERNATIONAL ENVIRONMENT PROGRAMS

Canada participates in several international environmental organizations, a number of which are specialized UN agencies. Canada is also a signatory to several international environmental conventions, including the Montreal protocol on ozone-depleting substances, the protocol to reduce sulphur emissions (or their transboundary fluxes) by 30% by 1993, and an agreement to control nitrogen oxide emissions.

Canada participates in a range of international environmental efforts, including global environmental monitoring and assessment; weather, climate and atmospheric research; scientific and technical commissions; registries of hazardous materials; waste management; natural resource management; and protection of endangered species.

CANADA IN THE LEAGUE OF NATIONS

In 1919, Canada became a founding member of the League of Nations, established to preserve international peace by providing a way to arbitrate disputes between countries.

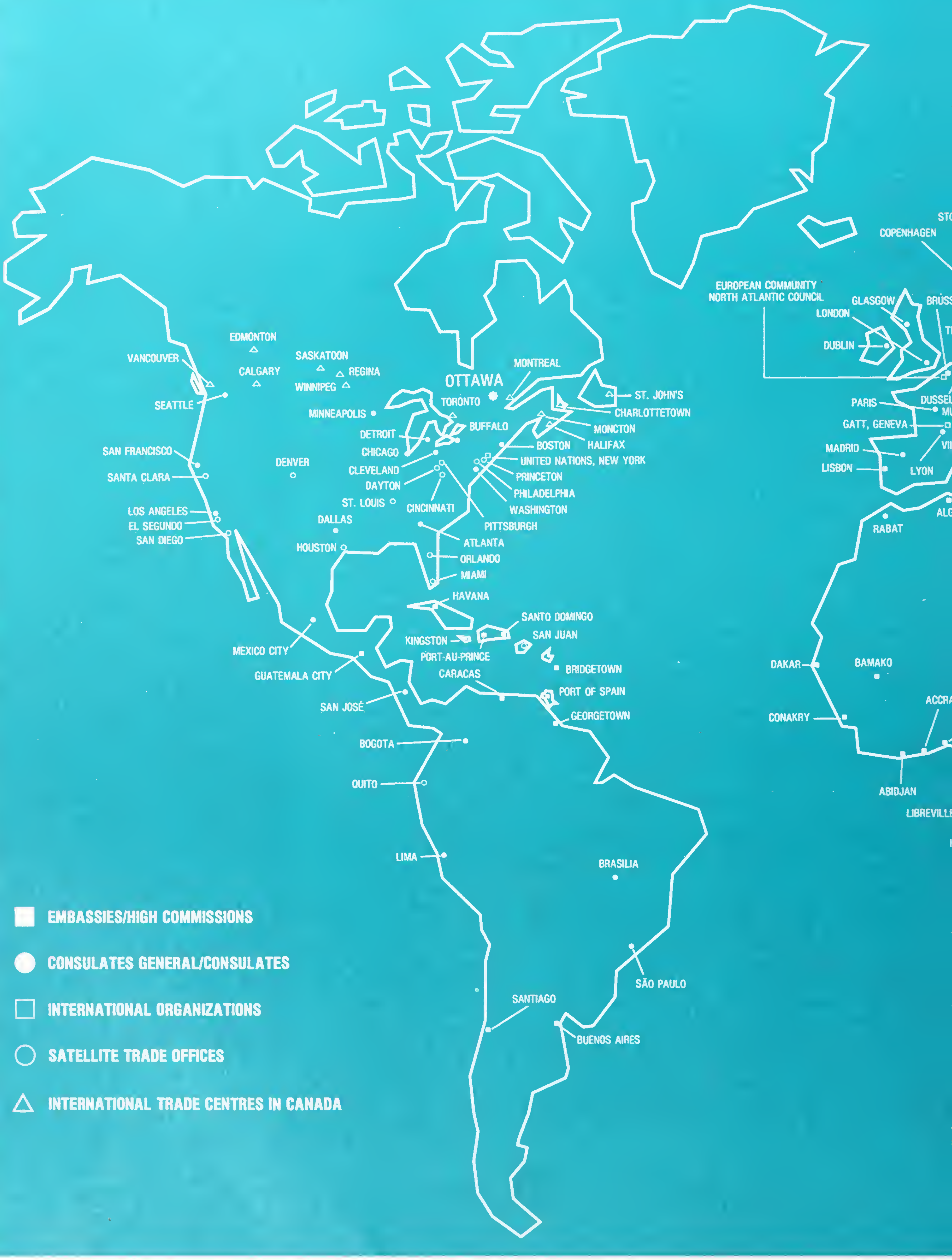
It was Canada's first independent involvement in an international organization outside the British Empire, although foreign policy was to remain Great Britain's responsibility for many years.

By 1921, the first Canadian organization to foster interest and understanding in international affairs had been established. The League of Nations Society, based in Ottawa, operated until 1942, promoting international peace through public knowledge of the League. Executive members included the likes of Sir Robert Borden, Canada's Prime Minister from 1911 to 1920.

Canada served on the League's council from 1927 to 1930, and remained active in the organization until 1945, when it was disbanded and replaced by the United Nations.

Although the League of Nations ultimately failed to head off a second world war, it had at its height 63 nation-members. Through it, Canada grew to a greater awareness of the importance of international co-operation in preventing war, and laid the groundwork for Canada's current role as a respected international diplomatic peacekeeping nation.

CANADA ON THE INTERNATIONAL SCENE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SASKATOON
CALGARY
REGINA
WINNIPEG
MONTREAL
OTTAWA
SEATTLE
TORONTO
ST. JOHN'S
CHARLOTTETOWN
MINNEAPOLIS
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DENVER
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CINCINNATI
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PITTSBURGH
SAN DIEGO
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MIAMI
HAVANA
SANTO DOMINGO
KINGSTON
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PORT-AU-PRINCE
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CARACAS
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GEORGETOWN
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QUITO
LIMA
BRASILIA
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DAKAR
BAMAKO
ACCRA
CONAKRY
ABIDJAN
LIBREVILLE

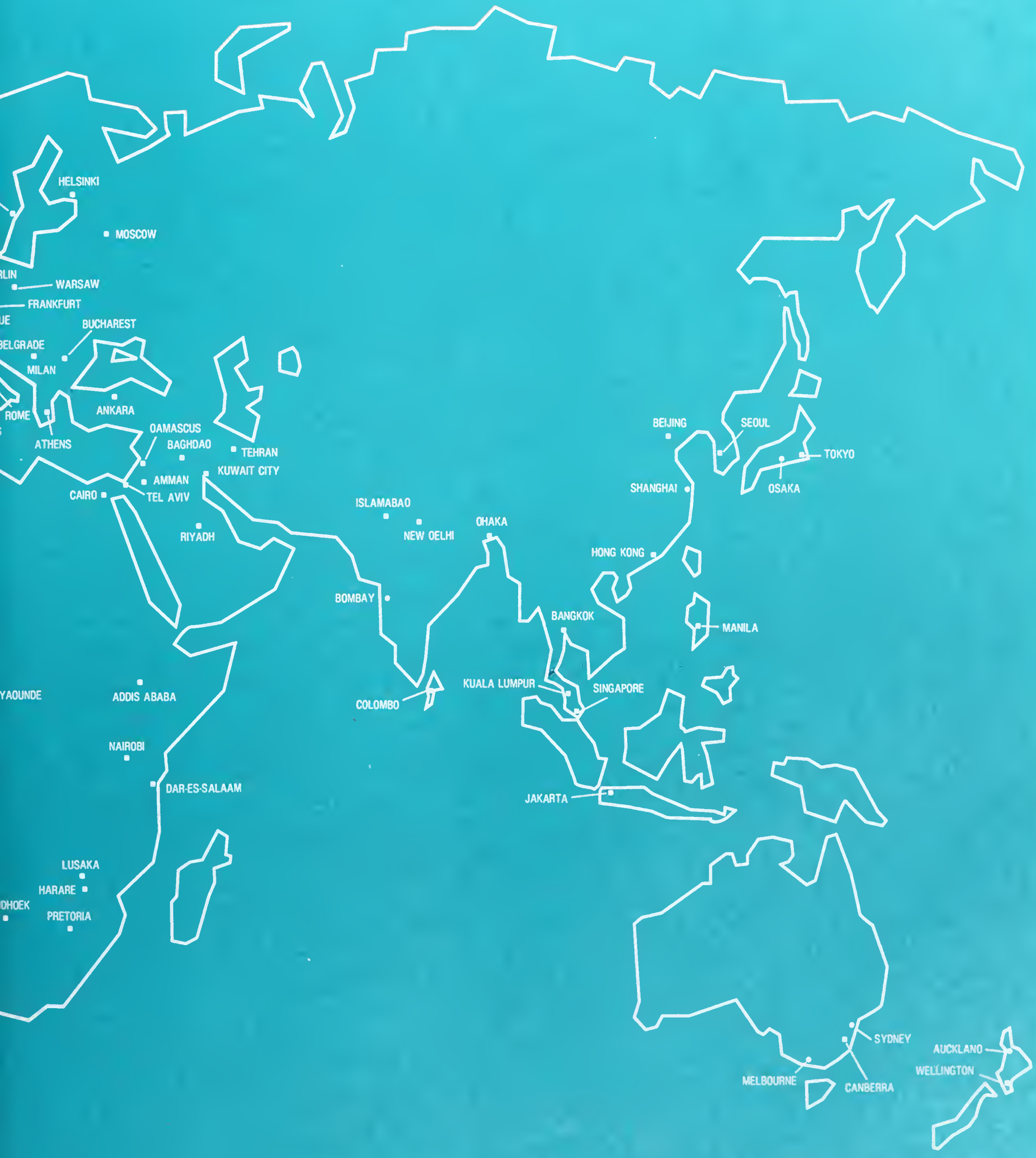
■ EMBASSIES/HIGH COMMISSIONS

● CONSULATES GENERAL/CONSULATES

□ INTERNATIONAL ORGANIZATIONS

○ SATELLITE TRADE OFFICES

△ INTERNATIONAL TRADE CENTRES IN CANADA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ATHENS
BAGHDAD
TEHRAN
KUWAIT CITY
AMMAN
CAIRO
TEL AVIV
RIYADH
ISLAMABAD
NEW DELHI
DHAKA
BEIJING
SEOUL
TOKYO
SHANGHAI
OSAKA
HONG KONG
BOMBAY
BANGKOK
MANILA
YAOUNDE
ADDIS ABABA
COLOMBO
KUALA LUMPUR
SINGAPORE
NAIROBI
DAR-ES-SALAAM
JAKARTA
LUSAKA
HARARE
DHOEK
PRETORIA
SYDNEY
AUCKLAND
WELLINGTON
MELBOURNE
CANBERRA

14.3 CONSULAR AND IMMIGRATION AFFAIRS

Bill Robson/George Bird/National Archives of Canada/PA 152323

President Richard Nixon and Prime Minister Pierre Elliott Trudeau sign the Pollution Pact, 1972.

IMMIGRATION

Canada's Employment and Immigration Commission develops immigration policy and programs, but External Affairs Canada is responsible for acting on these directives overseas. After consultations across the country, the federal government sets annual levels for refugees and other immigrants. Over 200 visa officers at 65 foreign posts select potential immigrants and those seeking temporary entry to study, work or to visit in Canada. In 1989-90, about 187,000 immigrants and 750,000 visitors, students and temporary workers were issued visas from overseas.

As a signatory to the UN Convention on Refugees, Canada has international obligations to meet and a humanitarian tradition to uphold. Consequently, the refugee program is a priority in Canada's immigration program. In 1989-90, visa officers helped over 34,000 refugees come to Canada.

SERVICES TO CANADIANS ABROAD

Many Canadians travel or reside in other countries. Through diplomatic and consular missions, External Affairs Canada provides passports, citizenship documents and notarial services. The department also offers advice and assistance to Canadians who lose money and travel documents, are arrested and imprisoned, become ill, or are affected by civil disturbances or natural disasters.

External Affairs Canada issues passports to Canadian citizens through offices in Canada and at Canadian diplomatic and consular missions abroad.

14.4 INTERNATIONAL TRADE

READING
SALMON

Canadian Government Exhibition Commission/National Archives of Canada/PA76688

Canada Calling Campaign in an English grocery store, 1939.

Canada's history has been shaped by international trade. Since Confederation, constant growth and change in the goods, raw materials and commodities Canada buys and sells has led to a system that plans, monitors and regulates international trade.

Maintaining healthy trade relations requires safeguarding the national interest while meeting the needs of Canada's trading partners. The emergence of trading blocs and supra-national political bodies (for example, the General Agreement on Tariffs and Trade (GATT) and the European Economic Community) has made it clear that Canada must have a sophisticated approach to trading negotiations.

As the developed world moves from production-based prosperity to a mixed economy dominated by service industries, Canada's natural wealth, maturing exporting capacity and industrious and educated population place the nation in a strong position to compete successfully in the world's markets.

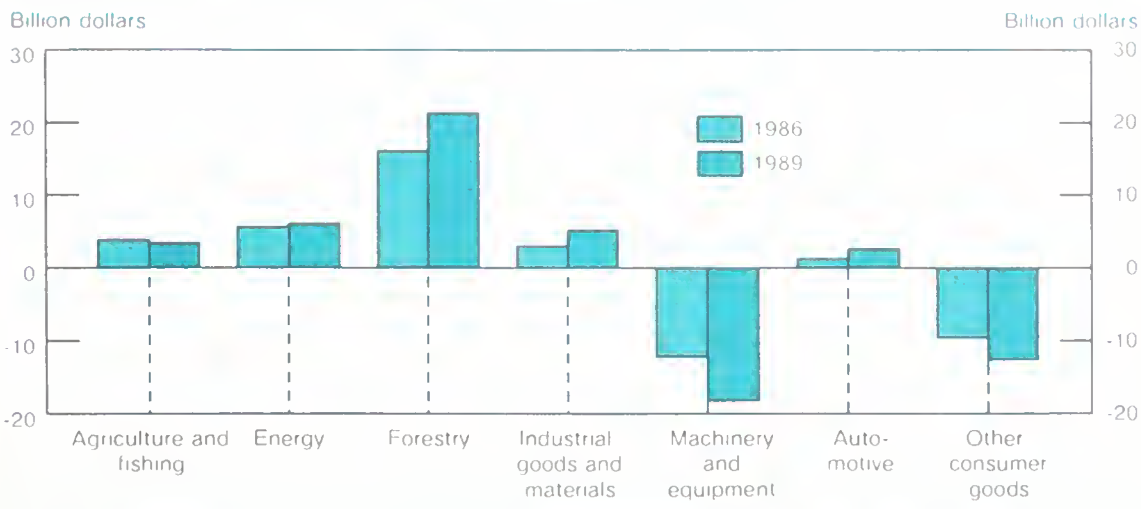
In 1982, Canada's trade commissioner service became part of External Affairs Canada. Since then, External Affairs and International Trade Canada has been Canada's primary contact with foreign governments and international organizations that influence trade. With 91 offices in 67 countries, the department promotes Canada's export trade and protects the nation's international commercial interests.

TRADE HIGHLIGHTS

In 1989, the value of imports into Canada increased 4.8% to $134.5 billion, following increases of 11.5% in 1988 and 4.3% in 1987. Exports rose 2.2% in value to $141.5 billion after increasing 9.7% in 1988 and 4.9% in 1987.

Chart 14.1

TRADE BALANCE, BY COMMODITY



The merchandise trade surplus — the amount by which exports exceed imports — was $6.9 billion for 1989, compared to $10.1 billion in 1988, $11.1 billion in 1987, and $9.9 billion in 1986. Slower growth of exports relative to imports accounts for most of the decline in the surplus; imports increased 21.9% from 1986 to 1989, while exports increased by only 17.6%.

Trade by commodity groups Machinery and equipment accounted for the largest share of total imports in 1989, with 32.2%. Imports of automotive products followed with a 23.8% share, followed by industrial goods and materials (19.7%), other consumer goods (11.2%), agricultural and fishing products (6.1%) and energy products (4.6%). From 1986 to 1989, only imports of automotive products showed an overall decline (−3.3%).

Exports in 1989 were led by automotive products, accounting for 24.5% of total exports, followed by industrial goods and materials (22.5%), machinery and equipment (17.6%), forestry products (15.9%), energy products (8.7%), and agricultural and fishing products (8.3%). From 1986 to 1989, increases were registered in exports of industrial goods and materials (39.0%), forestry products (32.6%), machinery and equipment (32.0%), energy products (12.8%), agricultural and fishing products (7.7%) and automotive products (0.8%).

IMPORTS AND EXPORTS BY COUNTRY GROUPINGS

Import and export statistics are grouped by principal trading areas. The European Economic Community (EEC) grouping includes Belgium, Denmark, France, the Federal Republic of Germany, Ireland, Italy, Luxembourg, the Netherlands, Greece, Portugal, Spain and the United Kingdom. The "Other OECD Countries" grouping comprises Austria, Finland, Iceland, Norway, Sweden, Switzerland, Turkey, Australia and New Zealand. (The EEC countries, United States, Japan and Canada are also members of the OECD).

In 1989, imports from the United States rose 5.7% or $5.1 billion, compared to an increase of 4.2% or $330 million in imports from Japan. Imports from "Other OECD Countries" grew 10.8% or $0.4 billion. Imports from the European Economic Community, whose main contributor is the United Kingdom, fell 5.2% or $790 million. Imports from other countries increased 9.2% or $1.2 billion, largely because of increased imports of crude petroleum.

From 1987 to 1989, the United States' share of Canadian imports increased from 68.6% to 69.5%. Japan's share remained at around 6% over the three-year period, but the shares of the EEC and of "Other OECD Countries" increased. Other countries raised their share from 10.2% to 10.6%.

Most of Canada's exports go to the United States — about 74% in 1988 and 1989. From 1984 to 1987, this share ranged from 76% to 78%. The share of Canadian exports destined for Pacific Rim countries rose from 9% in 1984, 1985 and 1986 to 12% in 1988 and 1989. Increases to other markets were less pronounced.

EXPORT DEVELOPMENT CORPORATION

The Export Development Corporation (EDC) is Canada's official export credit agency. The EDC provides export insurance, financing and guarantees to Canadian exporters regardless of size or sales volume.

KEEPING BUTTER EXPORTS COOL

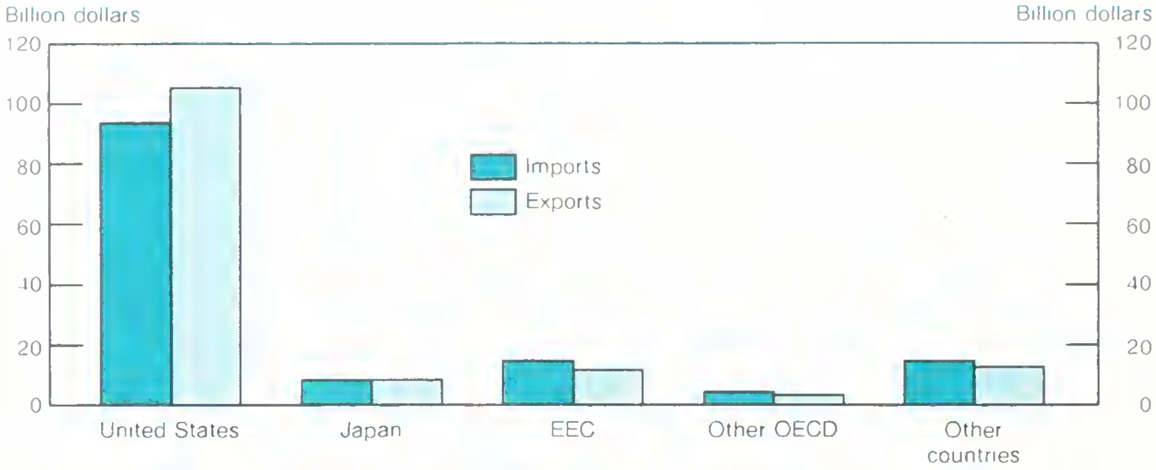
The introduction of refrigeration on ships tripled Canada's exports of butter to the United Kingdom between 1895 and 1900. In 1895, the first cold rooms were installed in merchant ships, but if the temperature outside was not cold enough, the ice would melt before the ship reached port. Two years later, mechanical refrigeration was developed and placed in 21 merchant ships.

By 1900, keeping cool was no problem and butter exports to Great Britain had jumped from 2 million to 7 million kilograms. Recent butter exports show Canada's major butter export destination is Algeria, which imported almost 2 million kilograms of butter in 1990. Canada exported a total of just over 4 million kilograms of butter for a value of over $7 million in 1990.

Export insurance EDC insurance protects Canadian exporters for 90% of losses due to buyer insolvency, payment default, contract violations by the buyer, blockage of funds or transfer difficulties, political strife, or cancellation of import and export permits.

Chart 14.2

CANADIAN MERCHANDISE TRADE WITH OTHER COUNTRIES, 1989



Export financing EDC lends money to foreign buyers so they can purchase Canadian exports. Medium- and long-term financing for up to 85% of the cost of goods and services is available through direct loans, multiple disbursement agreements, lines of credit and protocols, note purchases, and forfeiting or specialised credits. These are available at both fixed and floating rates of interest in a number of currencies. The EDC also offers insurance to foreign firms for production risks in transactions.

Conditions of service There is no limit on the size of a transaction the EDC will finance, but the following conditions must be met: the foreign borrower and its country are credit-worthy; the product or service contains adequate Canadian content; and the exporter has the financial and technical capability to complete the proposed transaction.

Export-related guarantees The EDC co-operates with other financial institutions to meet exporters' needs. It guarantees financial institutions against losses when they issue securities on behalf of exporters; provides direct financing for export transactions; buys promissory notes from exporters; finances sales of bulk agricultural products on terms of up to three years; and extends lines of credit to foreign banks to finance purchases of Canadian goods sold on short-term credit.

TARIFF RATES

Canada's tariff arrangements with other countries fall into three categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other arrangements. Imports into Canada are subject to nine distinct tariff treatments: 1. General; 2. Most-favoured-nation; 3. British preferential; 4. General preferential; 5. Least developed countries; 6. Commonwealth Caribbean; 7. Australia; 8. New Zealand; 9. the United States.

Canada adopted the GATT in January 1948. GATT grants tariff concessions and an exchange of most-favoured-nation treatment among participating countries, and also prescribes rules and regulations for international trade.

Trade relations between Canada and a number of countries are governed by trade agreements, by exchanges of most-favoured-nation treatment, and by less formal arrangements.

The United States Tariff (UST) rates are established under the Canada–US Free Trade Agreement. Only goods produced in the United States or Canada are eligible for this tariff treatment. The duties on certain goods were eliminated on January 1, 1989; other duties will be eliminated gradually over five or 10 years. All goods qualifying for the UST will be completely free of duty by January 1, 1998.

The Special Import Measures Act (SIMA) protects against "dumping", which occurs when a country exports goods at lower prices than apply in its domestic market. SIMA institutes countervailing duties that offset these lower prices when Canada determines that foreign governments are unfairly subsidizing imports. This protects Canadian industries from unfairly priced imports.

Drawback Some Canadian exporters manufacture goods using imported parts or material. Drawback legislation helps manufacturers to compete abroad and at home by providing relief from customs duty and sales tax on imported materials. This relief is essential for key industries, such as automobile manufacturing, that import large quantities of plant equipment and materials.

14.5 CANADIAN DEVELOPMENT ASSISTANCE PROGRAMS

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)

The Canadian government has provided assistance to developing countries since 1946. In 1968, the Canadian International Development Agency was established to manage most of Canada's international development assistance programs.

In 1988-89, Canadian aid totalled $2.9 billion, or 0.49% of GDP. From 1981-82 to 1988-89, Canada spent $17.3 billion on international co-operation.

Canada's aid to developing countries can be grouped broadly into two programs: the national initiatives program and the partnership program.

Under the national initiatives program, Canada contributes to development projects in Asia, Africa and the Americas, often by providing various forms of technical assistance, and funds scholarships for Third World students and trainees. Through the partnership program, Canada supports development initiatives beyond the scope of any single donor country.

Before 1988, about half of Canada's aid was tied to recipient countries procuring Canadian goods and services. In recent years, Canada has eased this policy to allow developing countries to use their own resources for development projects. This new aid strategy is based on six development priorities: alleviating poverty, achieving economic stability, increasing women's participation, fostering environmentally sound development, securing food supplies and ensuring access to energy resources.

Since 1986, Canada's development assistance program has been financed completely by grants rather than by development loans. At the same time, Canada has periodically forgiven loans to help developing countries cope with their growing debt problems.

Canada has long been one of the world's major suppliers of food aid — mostly through shipments of wheat, flour and canola oil. In 1988-89, Canada contributed $431.5 million in food aid, more than any other country. This aid is disbursed through multilateral agencies, through country-to-country agreements with recipients such as Bangladesh, Jamaica and Ethiopia, and through Canadian non-governmental organizations.

THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

IDRC is an independent organization financed by an annual grant from the Government of Canada. Since 1970, IDRC has helped developing countries find their own solutions to development problems by supporting research projects aimed at meeting basic needs and overcoming poverty. Projects focus on agriculture, food and nutrition sciences; health sciences; information sciences; social sciences; earth and engineering sciences; fellowships and awards; and communications.

By May 1990, IDRC had supported over 4,000 projects in 100 developing countries, as well as projects in various international institutions.

CANADIAN UNIVERSITY SERVICE OVERSEAS (CUSO)

Founded in 1961, CUSO is an independent Canadian voluntary organization working with communities and groups committed to development and social change in Canada and the Third World. CUSO recruits Canadians skilled in trades, business, agriculture and renewable resources, health, education, technology and community development for two-year postings in the Third World. CUSO also provides funding and other support to self-help and community development projects. Within Canada, CUSO helps educate the public on the causes of Third World underdevelopment.

CANADA HELPS OUT

In 1988-89 Canada's official development assistance (ODA) to foreign countries exceeded $2.9 billion, about 0.5% of the GNP. Canada's commitment to foreign aid has grown steadily since the establishment of the United Nations after World War II. One of the seven founding members of the Colombo Plan (Council for Technical Cooperation in South and Southeast Asia) in 1950, Canada has expanded its aid to cover 34 principal recipient nations in Asia, Africa, Latin America, and the Caribbean.

The Canadian International Development Agency (CIDA) was established in 1968 and currently administers 75% of Canada's ODA budget. Its development priorities, as stated in the ODA Charter, focus on alleviating poverty through environmentally sound sustainable development that emphasizes self-sufficiency, effective economic adjustment, food security, increased participation of women, and the use and development of locally-based energy sources.

Dept. of National Defence/National Archives of Canada/PA 3602

Red Cross at work, 1918.

National Archives of Canada/PA-38572

Daimler tractor used in World War I.

THE CANADIAN ARMED FORCES

The development of Canada's armed forces predates the formation of Canada, starting when its early colonies began developing a militia tradition. At the time, local citizens served as part-time soldiers, either as volunteers or through compulsion, to assist regular troops of the colonizing power in defending the colony.

The militia system continued after Confederation. The first citizen soldiers defended Canada after the American Civil War, as well as in the Red River Rebellion of 1870 and the North West Rebellion of 1885.

In 1871, the last British regular soldier left Canada and the young Dominion inherited the responsibility of defending itself. Artillery schools and two batteries were formed at Quebec and Kingston, providing a cadre of expert gunners, and the start of a tradition of Canadian excellence in this branch of the military arts.

Other schools opened across the country to teach rudimentary infantry and cavalry, as well as artillery skills. They provided a nucleus of regular soldiers to train the part-time militia. In 1898, some 200 militia volunteers made the hard journey to help

National Archives of Canada/C-47

Canada's militia in dress and field uniforms, 1898. Volunteers in the Yukon Field Force maintained order during the Klondike gold rush. By 1900, more volunteers were aiding British forces in the South African War.

CUSO's core funding comes from CIDA, with other contributions coming from provincial governments, businesses, and Canadian organizations and individuals.

CESO

Created in 1967, this independent, non-governmental organization sends Canadians with experience in business and technology as short-term volunteer consultants to businesses and organizations in the developing world. Since 1969, CESO volunteers have also assisted Canadian native people. In 1990, with the support of External Affairs Canada, CESO extended its services to Poland, Hungary and Czechoslovakia.

CESO receives core funding from CIDA, External Affairs Canada and Indian and Northern Affairs Canada. Contributions also come from provincial and territorial governments, from businesses, from other organizations and from overseas clients.

maintain order during the Klondike gold rush. Even before this Yukon Field Force returned in 1900, more volunteers sailed to aid Britain in the South African War.

Before World War I, medical, intelligence, ordnance, engineers, signals and the Army Service Corps were added to the order of battle.

In 1914, the militia had about 3,000 in the Permanent Force and less than 60,000 part-time soldiers. By 1918 almost as many Canadians had died as had belonged to the militia four years earlier. More than 628,000 men joined the Canadian Expeditionary Force; two-thirds of them served overseas. A further 5,000 joined the Royal Canadian Navy and more than 22,000 were part of the British flying services. These Canadians made key contributions to the allied victory, especially on the Western Front in battles like Passchendaele and Vimy Ridge, justly famous as key steps to Canadian nationhood.

Between the wars the armed services virtually atrophied. The militia was little larger than it had been in 1914 and the Royal Canadian Air Force, created in 1924, had about 4,000 airmen and no first-class equipment. The Royal Canadian Navy, born out of the fisheries protection service in 1910, was in no better shape.

During World War II the RCN grew from 13 ships and about 3,000 men at the beginning to 365 ships and 100,000 men and women in 1945. As in the previous war, it searched for enemy submarines in the North Atlantic, but it also participated in other theatres. Almost 250,000 men and women of the RCAF could be found throughout the world, while more than 131,000 British Commonwealth aircrew members trained at bases across Canada.

Nearly three-quarters of a million men and women served in the Army from 1939 to 1945, making important contributions in many areas but suffering abysmally at Hong Kong and Dieppe. In this war, Canadians landed at Normandy and fought their way through Northwest Europe. The Dutch still remember the Canadian Army which liberated their homeland.

In 1950, Canada sent volunteers to fight with United Nations forces in the Korean War, while RCN destroyers patrolled the coast and the RCAF assisted the airlift to Japan. Also during the early 1950s, the Army and the RCAF established bases in Europe as part of Canada's NATO obligations.

The Suez Crisis of 1956 saw the birth of UN peacekeeping operations. Since that time men and women of the Canadian Armed Forces have served to maintain the peace in all corners of the world. At the same time, the same forces have aided the civil power at home whenever called upon.

The Canadian Army, the RCN, and the RCAF officially died in February 1968, when the ***Canadian Forces Reorganization Act*** *created the unified Canadian Armed Forces. The initial visible manifestation of unification has recently been relaxed somewhat; CAF sailors and airmen can once again be seen sporting dark blue and light blue issue uniforms, rather than the green uniforms decreed in 1968.*

National Archives of Canada/PA 125127

Canadian soldier, 1888

14.6 DEFENCE

THE CANADIAN ARMED FORCES

The Canadian Forces is a combined service comprising four major commands and National Defence Headquarters, all reporting to the chief of defence staff.

In peacetime, the Canadian Forces consist of a regular, full-time force and a reserve force with several components. The primary reserve comprises personnel who perform part-time military duty and training. The supplementary reserve is not required to perform military duty or training unless placed on active service. The Canadian Rangers perform military duty or training as required but do not undergo annual training. Rangers generally patrol remote or isolated areas of Canada.

CANADA IN THE GULF WAR

Canada has long taken her contribution to the United Nations seriously, and members of her military have served with multinational United Nations forces since UN peacekeeping efforts began. Recently Canadian Forces personnel served with a multinational coalition enforcing UN resolutions in the Persian Gulf.

On August 24, 1990, Her Majesty's Canadian Ships ***Athabaskan, Terra Nova*** *and* ***Protecteur*** *sailed from Halifax to the Persian Gulf to enforce United Nations resolutions that condemned Iraq's August 2 invasion of Kuwait and imposed economic sanctions, by intercepting and boarding vessels suspected of breaking the sanctions.*

When war broke out on January 16, 1991, the commander of the Canadian naval task group took over responsibility for logistic resupply of allied warships in the Gulf.

A squadron of 24 Canadian CF-18 fighter aircraft, normally based in Baden-Soellingen, Germany, began flying with the allies in October, 1990. The 409 Tactical Fighter Squadron was deployed when sanctions started, then replaced by 439 Tactical Fighter Squadron in December. CF-18 combat air patrols over the Gulf at first protected allied and Canadian shipping, then later had their role expanded to sweep and escort missions, supporting other allied aircraft over enemy territory. On February 20, 1991, on the eve of the ground war, their role was enlarged again to include air-to-ground attack.

A Canadian field hospital with 550 doctors, nurses, medical support personnel and equipment assisted British forces, treating British casualties and Iraqi prisoners of war.

Canadian personnel serving in other areas in the theatre of war guarded Canadian installations, provided a medical team on an American hospital ship, and cleared explosives from Kuwait City after the war ended February 27, 1991.

Most Canadian Forces personnel returned home by mid-April. About 3,400 served altogether — a maximum of 2,500 in the theatre at the height of the war — with no operational casualties.

Maritime Command maintains combat-ready, general-purpose maritime forces to meet Canada's defence commitments. As well as supporting Canadian military operations, the Command also conducts search and rescue operations in the Atlantic provinces, in British Columbia and in surrounding ocean areas.

The Command's increased surface and air resources have been used for surveillance, for countering illicit drug traffickers, for detecting fishing violations in Canadian waters and for identifying vessels that pollute Canadian coastal waters.

The Maritime Command includes the **naval reserve**, organized into 27 divisions across Canada. The reserve's major role is maritime coastal defence — mine countermeasures and naval control of shipping. To improve overall readiness, the naval reserve is integrated with regular forces.

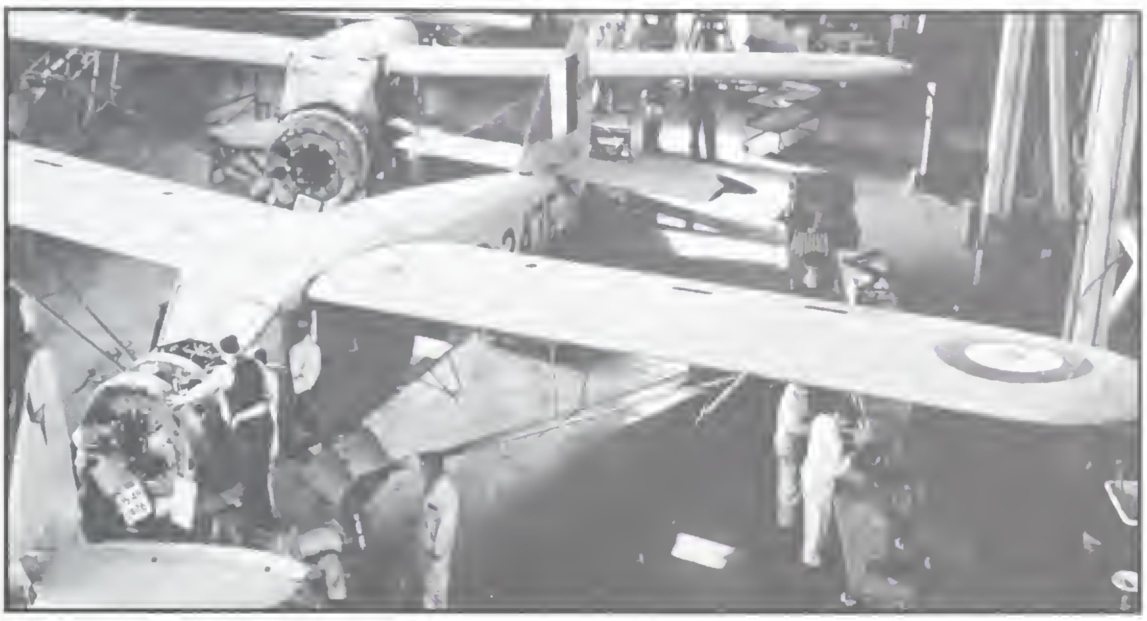
Mobile Command's combat-ready land forces are trained and equipped to protect Canadian territory, to meet Canada's overseas commitments, and to support United Nations or other peacekeeping operations.

The forces assigned to Mobile Command include brigades in the West and East and the special service force. The Command also provides troops to the United Nations Force in Cyprus.

The Commander, Mobile Command, also controls the **militia**, one of the oldest institutions in Canada, dating back to the late 17th century.

Air Command's combat-ready regular and reserve air forces meet Canada's national, continental and international commitments, as well as non-combat commitments in the Prairies. Air Command consists of five groups.

The Fighter Group's air defences enforce Canadian sovereignty in national airspace. The Group's forces are also required to meet Canada's commitments to continental defence under the NORAD agreement, and to Central European defence through NATO. The Group provides fighter support to Maritime Command and Mobile Command, and trains fighter pilots.



National Film Board/National Archives of Canada/C 85214

The "Norseman" aircraft in production for the RCAF, 1941.

The Air Transport Group supplies the Canadian Forces with worldwide air transport, including strategic airlifts, tactical airlifts, and general air transport. The Group commands all primary air search and rescue forces in Canada.

Rescue co-ordination centres are manned by the Canadian Forces, with Canadian Coast Guard officers performing liaison duties. Aircraft specially equipped and manned for search and rescue are periodically augmented by other aircraft and resources.

The Maritime Air Group manages anti-submarine air resources as part of Canada's contribution to NATO, patrols Canada's coastal waters and the Arctic Archipelago, and conducts pollution-monitoring flights and fisheries patrols.

The 10 Tactical Air Group supports the army with fire support and reconnaissance and tactical transport over battle areas.

The Air Reserve Group comprises two wings, each with two tactical helicopter squadrons and three other squadrons. As part of recent efforts to revitalize reserves, air reservists are increasingly involved in air force operations.

Communication Command provides strategic communications for the Canadian Forces and, in emergencies, for the federal and provincial governments. This encompasses message handling and data transfer; telephone systems; high frequency radio direction finding; and communications research. The **communication reserve** comprises six communication regiments, 12 communication squadrons and three independent communication troops. The reserve enhances the communications capability of regular force communications units.

Canadian Forces Northern Region co-ordinates forces employed in Canada's Northern region, which includes the Yukon and Northwest Territories and all islands in Hudson Bay, James Bay and the Arctic Archipelago. This region extends to the geographic North Pole, and comprises more than 3.9 million square kilometres, or 40% of Canada's area.

NATO AND NORTH AMERICA

Canada was one of the 12 original signatories of the North Atlantic Treaty Organization (NATO) in 1949. Subsequent Canadian governments have re-affirmed the view that Canada's security is linked to that of Europe and the United States. Canada fully supports reforms now taking place in Europe, and NATO's role in contributing to these reforms. While NATO is an alliance for defence through deterrence, it is also a major forum for political consultation among members. Canada's NATO membership fosters political, economic and scientific/technological relations with Europe, helping to balance Canada's relations with the United States.

North American Defence NATO security extends to North America through a series of bilateral arrangements. The best-known of these is the North American Air Defence (NORAD) agreement, in effect since 1959. Through NORAD, Canada participates in aerospace surveillance and warning, air defence, command and control, and other measures designed to protect the deterrent capacity of the United States.

THE ROYAL CANADIAN AIR FORCE

The Royal Canadian Air Force (RCAF) was officially founded in 1924, although work was under way to establish a Canadian air force as early as 1909.

In 1919-20, with the end of World War I, there were hundreds of trained pilots with the skill and expertise to launch an air force and a large supply of aircraft to support such a function.

The RCAF first served as a civil air operation and its duties included forest fire detection, fisheries and customs surveillance, search and rescue missions, agricultural disease prevention and aerial photography for mapping the country.

During World War II, 250,000 people served in the RCAF. In 1968, the RCAF became part of the Canadian Armed Forces and today, some 23,000 people are involved in its air command division.

Dept. of National Defence/National Archives of Canada/PA 147104

RCAF pilots on tarmac with Curtiss KITTYHAWK I aircraft, Alaska, 1943.

DEALING WITH DISASTERS

When a Canadian community is hit by a tornado, flood, or other major disaster, ***Emergency Preparedness Canada*** *(EPC) goes to work. This agency co-ordinates federal government response to natural and man-made civil disasters ranging from grasshopper plagues and chemical spills to nuclear attacks.*

If a major national emergency takes place, EPC is also set up to ensure Canada's government continues operating and to make sure vital facilities, plants and services are protected.

Canada first set up a civil defence organization in 1948 to meet the then-new threat of nuclear weapons. In 1966, the organization added new duties, co-ordinating federal response to peacetime emergencies. In 1986, it was named Emergency Preparedness Canada.

Often EPC knows about a disaster before anyone calls for federal help, through a situation centre in Ottawa that monitors emergencies across the country. Depending on the type of emergency, the most appropriate department takes the lead on behalf of the government, and other departments support it. Federal departments, Crown corporations and agencies must plan and prepare for emergency responsibilities related to their normal functions. For example, Transport Canada plans for disasters with trains, ships and aircraft; Health and Welfare Canada for disease or injury; and the Canadian Armed Forces for situations where their varied skills and equipment are needed.

EPC administers the ***Joint Emergency Preparedness Program*** *(JEPP), for the federal government, spending roughly $6.6 million a year to help provinces and territories with emergency preparedness projects, such as emergency generators for Arctic communities, emergency response vehicles in the prairies or communications networks in eastern provinces.*

EPC sponsors more than 100 courses, conferences and seminars a year at the Canadian Emergency Preparedness College in Arnprior, Ontario. There, more than 3,000 representatives from all levels of government and the private sector are trained in emergency planning and management techniques, with topics ranging from emergency social services to transporting dangerous goods.

Since planning can never remove all the effects of a disaster, EPC also administers federal ***Disaster Financial Assistance*** *arrangements. Since 1970, the Canadian government has paid more than $155 million in disaster relief to the provinces and territories, usually to help restore personal property, farmsteads, businesses and public works.*

Canadian Forces Europe's combat-ready European-based forces are assigned to NATO's Allied Command Europe. These forces include a mechanized brigade and an air division. Some Canadian-based formations and units are also assigned to Europe. Together, two brigades and certain other army units form the 1st Canadian Division.

In a time of crisis, the 1st Battalion, Princess Patricia's Canadian Light Infantry, based in Calgary, would be sent to Norway to reinforce NATO's northern flank.

PEACEKEEPING OPERATIONS

Since World War II, Canada has co-operated with the United Nations and other international bodies in peacekeeping and in promoting international security. Since 1948, more than 83,000 Canadian service personnel have participated in 19 peace-restoring, peacekeeping or truce supervisory operations mounted by the United Nations, and four other truce supervisory or observer missions. The largest commitment of Canadian forces to peacekeeping operations since the end of the Korean War occurred in 1964-65 when approximately 2,600 Canadians served on seven missions.

Canada first participated in a UN-sponsored truce supervision mission after India and Pakistan became independent of Britain in 1947. This mission's objective was to bring an end to the war between the two countries, and Canadian officers served as military observers until 1976. Since then, Canadian involvement has been limited to providing CC-130 Hercules aircraft for the biannual move of the mission's headquarters between Srinigar, India and Rawalpindi, Pakistan.

The United Nations Force in Cyprus was established in 1964, with Canada providing the first contingent. At present, the Canadian contingent consists of 575 personnel and is based around a combat arms unit supplied by Mobile Command.

Canada has been prominent in missions attempting to bring peace and stability to the Middle East. In 1948, the United Nations Truce Supervision Organization (UNTSO) was formed to oversee bilateral agreements arising out of the first Arab–Israeli war. Canada joined UNTSO in 1954, and currently provides 19 officers serving either as United Nations Military Observers or as staff officers at missions based in Egypt, Israel, Jordan, Lebanon and Syria. In 1974, the United Nations Disengagement Observer Force was formed to oversee the Syria/Israel ceasefire which ended the 1973 Yom Kippur War. A Canadian logistics company is stationed at Camp Ziouani in Israeli-occupied Syrian territory on the Golan Heights, and Canadians serve on the staff of Force Headquarters located in Damascus, Syria.

In 1986, Canada joined the Multi-National Force and Observers (MFO) in the Sinai, providing a Rotary Wing Aviation Unit and staff officers for the mission's main base at El Gorah. Up to 27 members of the Canadian Forces continue to serve on staff at MFO Headquarters.

The United Nations Iran/Iraq Military Observer Group was created in September 1988 to supervise the Iran/Iraq ceasefire. The 88 Canadian Signals Squadron set up communications for the mission, and 10 Canadians continued to act as military observers on the Iraqi side of the ceasefire line until the Gulf War broke out in January 1991.

While not formally a peacekeeping mission, the Office of the Secretary General for Afghanistan and Pakistan (OSGAP) was formed out of elements of the United Nations Good Offices Mission in Afghanistan and Pakistan. OSGAP oversaw implementation of the UN-sponsored Geneva Accords and the withdrawal of Soviet troops from Afghanistan between May 1988 and March 1990. A Canadian officer serves with OSGAP's military planning element.

The United Nations Observer Group in Central America was formed in December 1989 as a result of the efforts of the UN Secretary General and the heads of government of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. Canada provided the 89th Rotary Wing Aviation Unit, consisting of four Jet Ranger and four Twin-Huey aircraft supported by 129 personnel. Canada also provided 46 officers to serve as military observers. Up to 39 officers continue to serve either as military observers or on staff at the mission's headquarters in Tegucigalpa, Honduras.

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FOR FURTHER READING

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- *Canadian International Trading Patterns*, 1985. 65-503
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- *Canadian Imports by Domestic and Foreign Controlled Enterprises*, biennial. 67-509
- *Canada's International Trade in Services, 1969 to 1984*, 1986. 67-510

TABLES

LEGEND

. .	*not available*	e	*estimate*
. . .	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

14.1 TOTAL IMPORTS, EXPORTS AND TRADE BALANCE ON A BALANCE-OF-PAYMENTS BASIS, 1974-89

Year	Imports		Exports[1]		Trade balance $'000,000	Ratio of exports to imports %
	Value $'000,000	Percentage change from previous year	Value $'000,000	Percentage change from previous year		
1974	30,903	36.0	32,738	27.6	1,835	105.9
1975	33,962	9.9	33,616	2.7	−345^{r}	99.0
1976	36,608	7.8	38,166	13.5	1,559	104.3
1977	41,523	13.4	44,495	16.6	2,972	107.2
1978	49,048	18.1	53,361	19.9	4,313	108.8
1979	61,157	24.7	65,581	22.9	4,424^{r}	107.2
1980	67,903	11.0	76,681	16.9	8,778	112.9
1981	77,140	13.6	84,432	10.1	7,292	109.5
1982	66,738	−13.5	84,393	—	17,654	126.5
1983	73,098	9.5	90,556	7.3	17,457^{r}	123.9
1984	91,493^{r}	25.2	111,330	22.9	19,838	121.7
1985^{r}	102,669	12.2	119,061	6.9	16,392	116.0
1986^{r}	110,374	7.5	120,318	1.1	9,944	109.0
1987^{r}	115,119	4.3	126,226	4.9	11,107	109.6
1988	128,321	11.5	138,435	9.7	10,114	107.9
1989	134,528	4.8	141,462	2.2	6,934	105.2

[1] *Includes domestic exports and re-exports.*

14.2 IMPORTS INTO CANADA FROM ALL COUNTRIES ON A BALANCE-OF-PAYMENTS BASIS, 1986-89 AND PERCENTAGE OF 1989 TOTAL (MILLION DOLLARS)

Major commodity grouping	1986	1987	1988	1989	Percentage of 1989 total
Agricultural and fishing products					
Fruits and vegetables	2,373	2,501	2,576	2,730	2.0
Other agricultural and fishing products	4,856	4,890	4,981	5,439	4.0
Sub-total, agricultural and fishing products	7,229	7,391	7,557	8,170	6.1
Energy products					
Crude petroleum	2,716	3,447	2,977	3,705	2.8
Other energy products	2,369	2,467	2,199	2,516	1.9
Sub-total, energy products	5,085	5,914	5,176	6,221	4.6
Forestry products	1,044	1,165	1,293	1,358	1.0
Industrial goods and materials					
Metals and metal ores	6,204	6,102	7,801	7,570	5.6
Chemicals and plastics	5,841	6,228	7,423	8,132	6.0
Other industrial goods and materials	7,710	8,417	9,947	10,810	8.0
Sub-total, industrial goods and materials	19,755	20,747	25,172	26,511	19.7
Machinery and equipment					
Industrial and agricultural machinery	10,912	11,286	12,876	13,518	10.0
Aircraft and other transportation equipment	4,401	4,389	5,966	5,534	4.1
Office machines and equipment	4,447	5,356	5,851	6,289	4.7
Other machinery and equipment	11,418	12,263	15,773	17,970	13.4
Sub-total, machinery and equipment	31,178	33,294	40,466	43,311	32.2
Automotive products					
Passenger autos and chassis	12,062	12,346	12,164	11,762	8.7
Trucks and other motor vehicles	3,547	3,911	3,656	3,457	2.6
Motor vehicle parts	17,515	16,489	17,580	16,799	12.5
Sub-total, automotive products	33,124	32,746	33,400	32,018	23.8
Other consumer goods					
Apparel and footwear	2,859	3,126	3,107	3,475	2.6
Miscellaneous consumer goods	9,116	9,544	10,461	11,561	8.6
Sub-total, other consumer goods	11,976	12,670	13,568	15,036	11.2
Special transactions, trade	1,743	1,992	2,610	2,850	2.1
Unallocated BOP adjustments	−760	−800	−923	−946	−0.7
Total, imports	110,374	115,119	128,321	134,528	100.0

14.3 TOTAL EXPORTS FROM CANADA TO ALL COUNTRIES ON A BALANCE-OF-PAYMENTS BASIS, 1986-89 AND PERCENTAGE OF 1989 TOTAL (MILLION DOLLARS)

Major commodity grouping	1986	1987	1988	1989	Percentage of 1989 total
Agricultural and fishing products					
Wheat	2,860	3,253	4,567	2,608	1.8
Other agricultural and fishing products	8,080	8,483	8,796	9,174	6.5
Sub-total, agricultural and fishing products	10,940	11,735	13,363	11,781	8.3
Energy products					
Crude petroleum	3,775	4,855	4,043	4,475	3.2
Natural gas	2,524	2,527	2,954	3,023	2.1
Other energy products	4,593	4,644	4,863	4,783	3.4
Sub-total, energy products	10,891	12,026	11,860	12,280	8.7
Forestry products					
Lumber and sawmill products	6,384	7,500	6,900	7,062	5.0
Wood pulp and other wood products	3,958	5,351	6,365	6,875	4.9
Newsprint and other paper and paperboard	6,603	7,314	8,901	8,527	6.0
Sub-total, forestry products	16,945	20,164	22,166	22,464	15.9
Industrial goods and materials					
Metal ores	4,123	4,660	4,852	5,575	3.9
Chemicals, plastics and fertilizers	4,823	5,478	7,582	6,904	4.9
Metals and alloys	8,902	9,697	11,612	13,792	9.7
Other industrial goods and materials	5,029	5,117	5,729	5,521	3.9
Sub-total, industrial goods and materials	22,878	24,952	29,775	31,792	22.5
Machinery and equipment					
Industrial and agricultural machinery	4,463	4,520	5,026	5,471	3.9
Aircraft and other transportation equipment	4,746	4,469	4,404	5,455	3.9
Other machinery and equipment	9,703	10,681	13,277	14,040	9.9
Sub-total, machinery and equipment	18,911	19,670	22,707	24,966	17.6
Automotive products					
Passenger autos and chassis	17,420	13,906	15,804	15,522	11.0
Trucks and other motor vehicles	5,561	6,490	8,082	8,375	5.9
Motor vehicle parts	11,427	11,827	9,745	10,801	7.6
Sub-total, automotive products	34,408	32,223	33,630	34,698	24.5
Other consumer goods	2,390	2,643	2,899	2,610	1.8
Special transactions, trade	343	370	1,190	1,544	1.1
Unallocated BOP adjustments	2,183	2,342	844	−674	−0.5
Total, exports	119,889	126,125	138,434	141,461	100.0

14.4 TRADE OF CANADA WITH PRINCIPAL TRADING AREAS ON A BALANCE-OF-PAYMENTS BASIS, 1983-89

Item and year	United States		Japan		EEC[1]		Other OECD[2]		Other countries[3]	
	Value $'000,000	%	Value $'000,000	%	Value $'000,000	%	Value $'000,000	%	Value $'000,000	%
Imports										
1983	52,721	72.1	4,355	6.0	5,819	8.0	2,040	2.8	8,164^r	11.2
1984	65,893	72.0	5,477	6.0	8,526	9.3	1,900	2.1	9,697^r	10.6
1985	73,406	71.5	6,063	5.9	10,573	10.3	2,530	2.5	10,097^r	9.8
1986^r	76,427	69.2	7,576	6.9	12,603	11.4	2,767	2.5	11,002	10.0
1987^r	78,985	68.6	7,498	6.5	13,816	12.0	3,084	2.7	11,737	10.2
1988	88,405	68.9	7,949	6.2	15,284	11.9	3,605	2.8	13,079	10.2
1989	93,476	69.5	8,279	6.2	14,494	10.8	3,995	3.0	14,284	10.6
Exports										
1983	66,388	73.3	4,787	5.3	6,748	7.5	1,689	1.9	10,943^r	12.1
1984	84,816	76.2	5,715	5.1	7,098	6.4	1,938	1.7	11,763	10.6
1985^r	93,793	78.8	5,597	4.7	6,942	5.8	2,169	1.8	10,561	8.9
1986^r	93,326	77.6	5,819	4.8	8,012	6.7	2,175	1.8	10,986	9.1
1987^r	96,605	76.5	6,762	5.4	9,299	7.4	2,564	2.0	10,995	8.7
1988	102,617	74.1	8,303	6.0	10,733	7.8	3,078	2.2	13,703	9.9
1989	105,471	74.6	8,499	6.0	11,717	8.3	3,431	2.4	12,345	8.7

[1] *EEC countries are Belgium, Denmark, France, the Federal Republic of Germany, Ireland, Italy, Luxembourg, the Netherlands, Greece, Portugal, Spain and the United Kingdom. Prior to 1986, Portugal and Spain were not included in the EEC.*

[2] *OECD countries include EEC countries, (referred to above) Austria, Finland, Iceland, Norway, Sweden, Switzerland, Turkey, Australia, New Zealand, the United States, Japan and Canada.*

[3] *This group includes all countries other than the EEC countries and other OECD countries.*

14.5 MEASURES OF BILATERAL TRADE BETWEEN CANADA AND THE UNITED STATES, 1982-89 (BILLIONS OF CANADIAN DOLLARS)

Year	Southward trade			Northward trade			Trade balance		
	Canadian exports[1]	US imports[2]	Reconciled data	Canadian imports[3]	US exports[4]	Reconciled data	Canada	US	Reconciled data
1982	57.8	57.3	59.0	48.0	41.6	47.1	9.8	15.7	12.1
1983	66.5	64.3	67.6	54.3	47.2	53.1	12.2	17.1	14.4
1984	85.2	86.1	86.9	69.1	60.2	66.9	16.1	25.9	20.0
1985	93.2	94.2	95.0	74.6	64.5	73.5	18.6	29.7	21.5
1986	93.4	94.8	95.7	77.6	63.0	77.3	15.8	31.8	18.4
1987	94.8	94.3	96.3	79.5	79.2	79.3	15.3	15.1	17.0
1988	100.8	99.6	102.0	89.2	88.1	88.1	11.6	11.5	13.9
1989	101.4	104.5	104.4	94.0	93.0	93.0	7.4	11.5	11.4

[1] *Canadian exports to the US as recorded by Canada.*

[2] *Canadian exports to the US as recorded by the US.*

[3] *US exports to Canada as recorded by Canada.*

[4] *US exports to Canada as recorded by the US. US published export data include the adjustment for undercoverage of exports.*

14.6 RECEIPTS AND PAYMENTS ON TRAVEL BETWEEN CANADA AND OTHER COUNTRIES, SELECTED YEARS (MILLION DOLLARS)

Country	1983	1984	1985	1986	1987	1988	1989
United States							
Receipts	2,664	3,146	3,674	4,506	4,160	4,267	4,277
Payments	3,903	3,991	4,158	4,429	5,174	5,710	6,602
Balance	−1,239	−845	−484	+77	−1,014	−1,443	−2,325
Other countries							
Receipts	1,177	1,270	1,332	1,827	2,139	2,627	2,955
Payments	2,142	2,551	2,952	3,070	3,654	3,921	4,106
Balance	−965	−1,281	−1,620	−1,243	−1,515	−1,294	−1,151
All countries							
Receipts	3,841	4,416	5,006	6,333	6,299	6,894	7,232
Payments	6,045	6,542	7,110	7,499	8,828	9,631	10,708
Balance	−2,204	−2,126	−2,104	−1,666	−2,529	−2,737	−3,476

14.7 TOTAL ASSISTANCE DISBURSEMENTS, BY PROGRAM[1], 1984-85 TO 1988-89 (MILLION DOLLARS)

Program	1984-85	1985-86	1986-87	1987-88	1988-89
Government-to-government					
Anglophone Africa	195.06	159.60	218.12	293.70	303.55
Francophone Africa	195.82	176.09	198.99	200.67	237.00
Americas	127.92	116.38	153.03	165.53	173.36
Asia	337.04	355.46	378.42	414.43	436.08
Europe	−0.01	−2.30	−3.13	−1.99	−4.30
Oceania	1.30	1.54	1.28	2.37	3.38
Miscellaneous	17.50	9.44	20.30	26.49	29.26
Sub-total, government-to-government	874.64	816.21	967.02	1,101.20	1,177.00
Other country-to-country					
Canadian non-governmental organizations	168.65	196.84	224.72	250.38	280.57
International non-governmental organizations	21.44	22.52	24.04	24.55	23.98
International Development Research Centre	76.25	82.28	90.69	93.93	101.89
Humanitarian assistance	75.15	25.85	37.73	47.53	56.43
Industrial co-operation	.	27.83	32.38	38.53	60.55
Petro-Canada International Assistance Corp.	51.54	20.92	55.32	65.77	59.81
International Centre for Ocean Development	0.80	0.42	2.33	4.01	5.16
Scholarship programs	4.40	5.96	8.55	11.57	16.28
Miscellaneous programs	40.32	1.69	0.50	13.40	62.07
Administrative costs	99.32	108.88	124.85	134.85	174.06
Sub-total, other country-to-country	537.87	493.19	601.12	684.52	840.81
Multilateral assistance					
General funds	72.25	72.25	78.50	84.20	90.00
Renewable natural resources	13.90	14.00	22.57	32.37	17.74
Population and health	12.85	13.75	17.75	16.05	16.70
Commonwealth and francophone programs	17.41	19.10	19.97	22.83	22.66
Other programs	5.87	5.45	12.45	21.62	18.90
International humanitarian assistance	12.80	14.80	14.75	15.15	17.25
World Food Program	146.03	150.30	166.38	172.77	188.40
Contributions to regular budgets and voluntary funds by External Affairs and other departments	27.32	29.63	30.96	36.25	35.19
International financial institutions	376.03	545.34	590.82	437.10	509.03
Sub-total, multilateral assistance	684.47	864.61	954.16	838.38	912.86
Total assistance (ODA)	2,096.97	2,174.01	2,522.29	2,624.06	2,930.67
ODA/GNP ratio (%)	0.489	0.464	0.500	0.481	0.492

[1] *CIDA funds and others.*

14.8 DEPARTMENT OF NATIONAL DEFENCE EXPENDITURES, BY PROVINCE AND OUTSIDE CANADA, 1984-85 TO 1988 (MILLION DOLLARS)

Province or territory	1984-85	1985-86	1986-87	1987 88	1988 89
Newfoundland	65.6	76.1	123.3	103.6	123 6
Prince Edward Island	69.8	69.6	87.6	61.7	60 3
Nova Scotia	952.0	977.6	1,242.7	975 7	954 1
New Brunswick	382.3	336.2	407.4	960.0	907.4
Quebec	1,178.4	1,195.0	1,183.2	1,883.5	1,748 3
Ontario	2,687.3	2,747.2	2,934.3	3,465.7	3.657.6
Manitoba	350.9	357.6	425.3	398.7	453 6
Saskatchewan	131.1	132.8	153.5	97.8	92 8
Alberta	635.8	626.9	756.5	608.2	680.2
British Columbia	733.9	769.1	881.5	760.7	774.0
Yukon	1.6	1.5	1.0	2.3	2.6
Northwest Territories	35.5	22.4	29.2	6.9	12.6
Sub-total, Canada	7,224.2	7,312.0	8,225.5	9,324.6	9,467.1
Outside Canada	1,701.9	1,855.8	1,661.0	1,325.8	1,701.1
Total	8,926.1	9,167.8	9,886.5	10,650.4	11,168.2

14.9 CANADIAN ARMED FORCES PERSONNEL, 1976-90

Year	National Defence Head-quarters	Mobile Command	Air Command	Maritime Command	Canadian Forces Training System	Canadian Forces Communi-cation Command	Canadian Forces Europe	Total
1976	10,870	18,613	23,352	10,064	8,524	3,289	5,026	79,738
1977	10,712	18,452	23,547	10,445	9,012	3,094	5,124	80,386
1978	10,505	18,369	23,232	11,106	9,627	3,202	5,096	81,137
1979	10,618	17,952	23,207	11,210	9,080	3,198	5,326	80,591
1980	10,468	17,535	23,223	10,769	9,725	3,170	5,408	80,298
1981	10,214	17,615	23,385	10,624	10,458	3,096	5,469	80,861
1982	10,494	18,732	23,684	10,864	10,588	3,039	5,457	82,858
1983	11,118	19,098	23,991	11,150	8,864	3,147	5,537	82,905
1984	11,010	18,704	24,565	11,055	7,217	3,340	5,784	81,675
1985	11,373	19,375	24,507	11,538	7,612	3,463	5,872	83,740
1986	11,634	19,138	24,241	11,437	7,547	3,409	6,967	84,373
1987	12,123	19,865	24,274	11,825	8,404	3,329	7,350	87,170
1988	12,424	19,963	23,947	12,109	8,454	3,252	7,487	87,636
1989	12,929	19,955	23,214	12,106	8,617	3,216	7,853	87,890
1990	13,733	19,739	22,883	11,634	8,756	3,220	8,011	87,976

Sources

Canadian International Development Agency.
Department of National Defence.
Statistics Canada.

THE ECONOMY

Section 4

Chapter 15

National Archives of Canada/C 21327

AGRICULTURE

15.1 INTRODUCTION

WHEN THE FIRST CANADIAN transcontinental rail line was completed in 1885, farming occupied 60 out of every 100 families. Today, only three out of a hundred Canadian families farm.

Canada's farms have declined from a peak of 733,000 in 1941 to less than 300,000 today. However, the average farm is much larger now than in 1941, and agricultural production has increased dramatically.

The chief reason for this has been technological change. Crop productivity has soared in the wake of mechanization and improved seeds, fertilizers and pesticides. Similar advances in animal husbandry have come through improved health, breeding and feeding. This progress has brought huge increases in capital requirements for buildings, machinery and equipment. As a result, specialization is increasing.

Major changes in food processing and distribution have also occurred. A decreasing portion of the final price consumer's pay goes to farmers; most is taken by the costs of transportation, processing, packaging and retailing.

Canadian agriculture is sensitive to international as well as domestic influences. More than half of all Canadian agricultural production is exported — 70% of these exports are grains and oilseeds. In the 1980s, many Canadian farmers were squeezed financially when world grain prices declined. In the 1990s, agriculture will be a pivotal issue in international trade and tariff negotiations.

The production, processing, wholesale and retail sectors of agriculture account for about 10% of Canada's economic activity. The importance of agriculture to the nation's continuing development has been recognized by all levels of government. Farmers are supported by programs for research, extension, credit, regulation, inspection and community development. Universities and colleges across Canada also contribute to agricultural education and research.

Over the years, Canadian farmers have formed a number of their own associations to meet economic, social and professional needs. Many of these farmer-owned co-operatives, commodity associations and national marketing boards belong to the Canadian Federation of Agriculture.

Ultimately, the industry's continued success rests on the hard work, imagination and co-operation of tens of thousands of individual producers.

B.J. Woodruff/National Archives of Canada/C 9654

15.2 CANADA'S AGRICULTURAL REGIONS

EARLY FARMS

Statistics on Canada's farms were first published in 1931, coincidentally marking the beginning of a great shift in the agricultural landscape. The shift — from subsistence farming to the large, highly-mechanized farm holdings of today — was particularly accelerated following World War II. Between 1931 and 1986 the number of farms dropped by more than half, from 728,623 to 293,090, while the average size of farms more than doubled, jumping from 224 acres to 572 acres.

There has also been a dramatic drop in the percentage of the population living on farms in Canada. In 1931, 31% of all Canadians lived on farms, compared to only 3% by 1986.

Mines & Resources/National Archives of Canada/PA 21313

There are four main types of farms in Canada. Livestock farms specialize in beef cattle and hogs, poultry or dairy cattle. Grain farms produce wheat, barley, corn, oats, flax and canola/rapeseed. Mixed farms produce both grain and livestock. Special crop farms produce vegetables, fruits, root crops, tobacco or forest products. Each region of Canada is dominated by one of these farm types.

THE ATLANTIC REGION

This region includes Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and the Gaspé district of Quebec. It is hilly, with relatively fertile soil developed under forest cover. The climate is modified by the sea, but is also affected by cold currents from the coast of Labrador and by northern winds. Precipitation averages 760 to 1 500 mm annually. Mixed farming is most common, with forage crops supporting a strong livestock industry. Small farm operators often have other sources of income, such as lumbering or fishing.

The major Atlantic production areas include Prince Edward Island, where potatoes are the major crop, and Nova Scotia's Annapolis Valley, which is famous for fruit, especially apples.

THE CENTRAL REGION

This lowland bordering the St. Lawrence River includes the Ottawa Valley and parts of Quebec and extends through Southern Ontario to Lake Huron. Fertile soils — mostly formed by glacial deposits and lake sediment — and a mild climate modified by the Great Lakes and the St. Lawrence River allow for varied farming. Precipitation averages from 760 to 1 140 mm a year. This region is the most densely populated in Canada, offering large, concentrated markets for farm produce.

Ontario's agricultural sector is Canada's largest and most diverse. Ontario has more commercial livestock farms than any other province, and most of Canada's fruit and grapes are grown on the Niagara Peninsula. Forage crops are the most common use of cultivated land.

In Quebec, more than half the commercial farms are dairy farms; Quebec is also the world's largest producer of maple syrup.

THE PRAIRIE REGION

Manitoba, Saskatchewan and Alberta contain 80% of the farmland in Canada. The Prairie's long sunny summer days and generally reliable precipitation produce quality grains — hard red spring wheat (the largest single cereal crop), barley, canola/rapeseed and other grains and oilseeds. Native grasslands and cultivated forage crops and feed grains support a large beef cattle industry.

Saskatchewan produces 60% of the Canadian wheat crop and large quantities of other grains. Alberta is Canada's chief producer of feed grains and beef cattle, and is second to Saskatchewan in wheat production. In both provinces, irrigation is increasingly important. Manitoba, with the highest Prairie rainfall and over 100 frost-free days, supports more varied farming.

THE PACIFIC REGION

Concentrated in river valleys, the southwestern mainland and southern Vancouver Island, British Columbia farms are mostly small and highly productive. Only 2% of BC land is used for agriculture, with dairying and livestock predominating. However, Canada's largest apple production is concentrated in the Okanagan Valley, which is also noted for peaches, plums, apricots, cherries and grapes.

THE NORTHERN REGION

North of latitude 57°, agriculture occurs in parts of northern British Columbia, Yukon, and the Mackenzie River Valley in the Northwest Territories. However, the harsh climate and long distances to markets limit commercial agriculture. The North has an estimated 1.3 million hectares of potentially arable land and large expanses of grazing land, but there are fewer than 30 commercial farms. Precipitation varies from light in the northern Yukon to heavy on the mountainous coast of British Columbia. Frosts can occur year round, but some crops are grown on well-drained, south-facing slopes.

AGRICULTURE CENSUS

The first Census in the new Dominion of Canada took place in 1871, at a time when agriculture was the dominant economic activity of most Canadians. Although less than 4% of Canada's total population now lives on farms, agriculture continues be a vital part of the country's economy.

The importance of agriculture was recognized early on. The first Census of Population on Canadian territory, in New France in 1666, was followed a year later by a separate census of cattle, sheep and farmland under cultivation.

In fact, Canada's first permanent Census and Statistics Office, established in 1905, operated initially under the Ministry of Agriculture.

The present-day Census of Agriculture is separate from the Census of Population, but takes place at the same time. The first Census of Agriculture after Confederation was taken in Manitoba in 1886 and every five years after. From 1906 onward, Saskatchewan and Alberta also had agriculture censuses every five years.

The first nationwide five year, or quinquennial, Census of Agriculture was taken in 1956, and the current legislation, the ***Census Act*** *of 1971, provides for a Census of Population and a Census of Agriculture every five years.*

The state of Canadian agriculture has always been reflected in the types of census questions asked of farmers. The 1891 Census questionnaire asked about products processed on farms, from home-made butter to cheese, cloth and linen. As well, questions on draught animals, including horses and oxen, reflected the lack of mechanization at that time.

By 1986, the emphasis on the Census of Agriculture changed to reflect the larger, more specialized farms of today. Questions on home-made products and draught animals have long since been dropped. Instead, the Census now covers such topics as computers, tractors by size category, and use of fertilizers, pesticides and irrigation.

In 1991, farm operators were asked to answer questions on crops, livestock, income, paid agricultural labour, land management practices and other topics. After it is compiled, the resulting data will be used by decision-makers in associations, businesses, industries and all levels of government, to plan lobbying, marketing, production, and legislative strategies.

The 1991 Census also allowed for the first time for more than one farm operator to be named, to reflect the role of women as decision-makers in the farming industry.

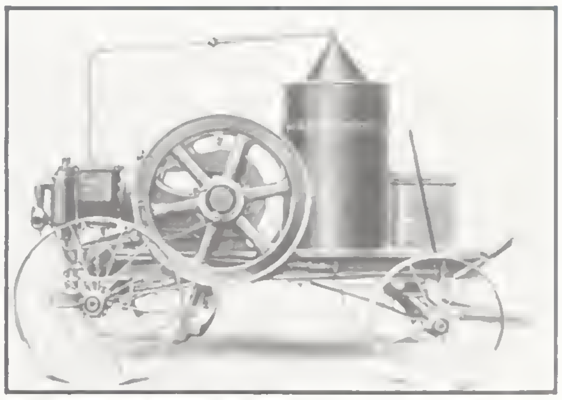
AGRICULTURE

CENSUS DAY

15.3 A PROFILE OF CANADA'S FARMS AND FARMERS

Agricultural statistics help producers and government agencies make decisions about the production and marketing of agricultural products. For example, they can be used to help improve the efficiency of agricultural methods or to assess the environmental impacts of farming practices. The statistics gathered by the Agriculture Division of Statistics Canada are used by over 200 organizations representing various facets of agriculture. Statistics Canada augments Census and intercensal survey data with information from Agriculture Canada, various agricultural agencies and provincial departments, and with regular voluntary reports from thousands of farmers.

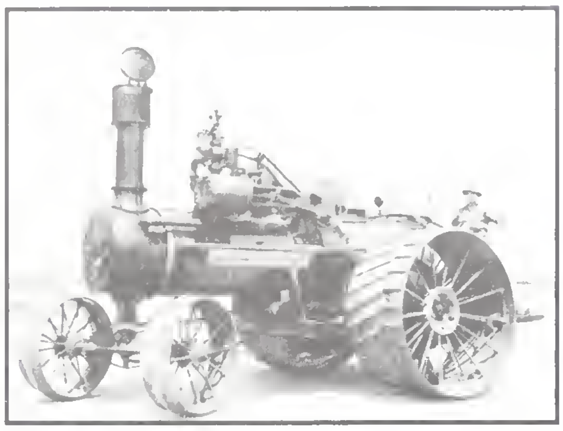
The current statistical benchmark for agriculture is the 1986 Census of Agriculture, which provides a wealth of information on the characteristics of Canada's agricultural population.



W.J. Topley/National Archives of Canada/PA 11314

THE FARM POPULATION

Between 1981 and 1986, the number of persons living in farm households dropped from 1,152,880 to 999,800, a 13% reduction. The farm population is aging, but not quite as fast as the general population. The average age on farms increased from 30 in 1971 to 31 in 1981, and to 32 in 1986. By comparison, the average age of the general population was 30 in 1971, 32 in 1981 and 33 in 1986.



Western Development Museum/National Archives of Canada/PA-38420

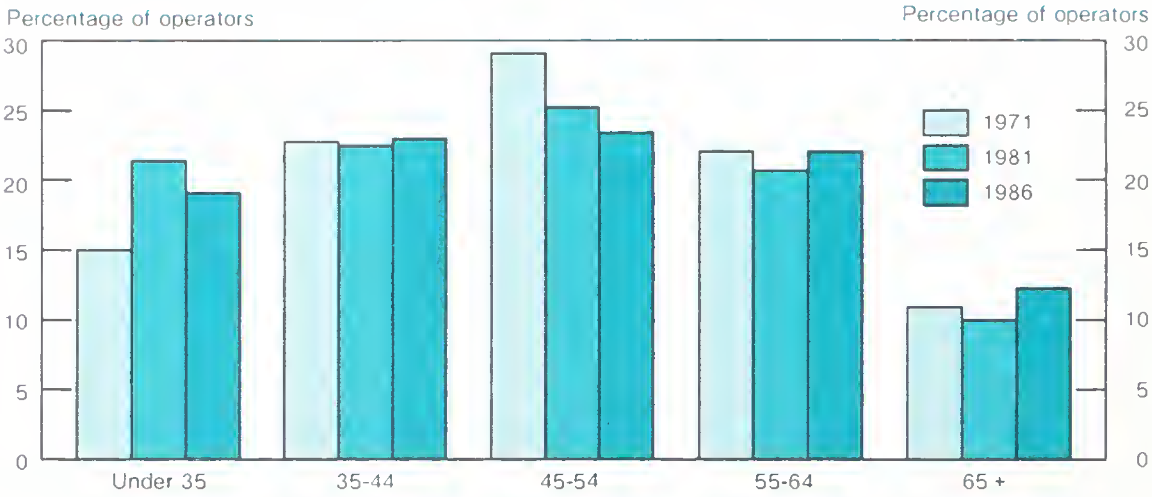
Early steam tractor.

FARM OPERATORS

Since 1941, the number of farm operators in Canada has decreased steadily. The 1986 Census recorded 293,090 farm operators, of whom 13,300 were women. The average age of operators was 48 in 1986; the lowest average age was 46 in Quebec, while the highest was 50 in British Columbia. In 1986, only half of female farm operators were married, compared with 87% of male operators. However, 34% of female operators were widows.

Chart 15.1

FARM OPERATORS, BY AGE GROUP



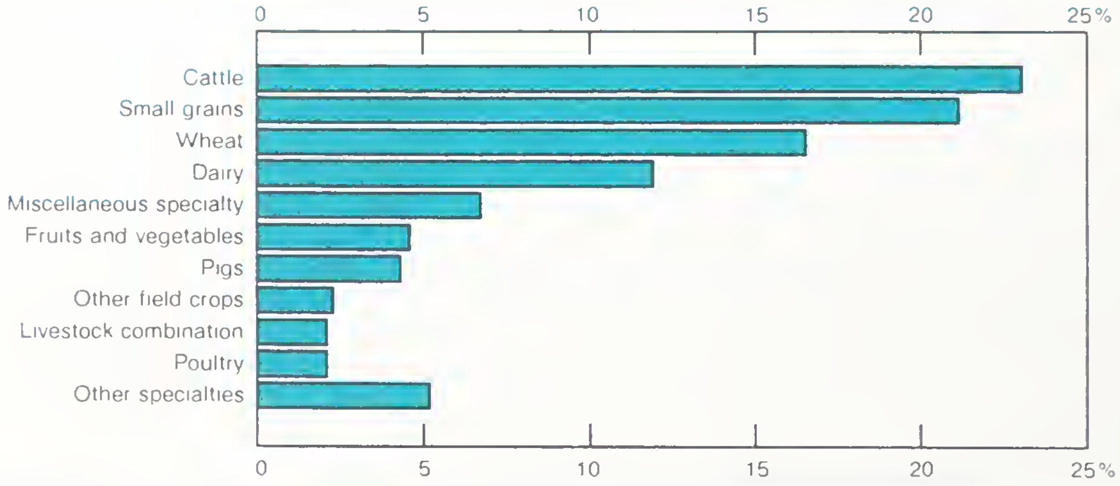
Farm operators are becoming better educated. Between 1981 and 1986, the number of farm operators with postsecondary education increased 3%. In 1986, 30% of operators had some postsecondary education; nearly 90% of this group had earned a certificate or diploma.

About two-thirds of farm operators listed agriculture as their primary occupation. Total income in 1985 varied considerably: 61% of operators reported an income of less than $25,000, while 8% reported $50,000 or more.

Farm income accounted for only 8% of the incomes of part-time farm operators (those who reported working one or more days off the farm). Full-time farm operators accounted for 80% of agricultural sales and controlled 72% of agricultural capital. However, their average incomes were 23% lower than those of farm operators who also worked off the farm.

Chart 15.2

PERCENTAGE OF FARM OPERATORS, BY FARM PRODUCT, 1986



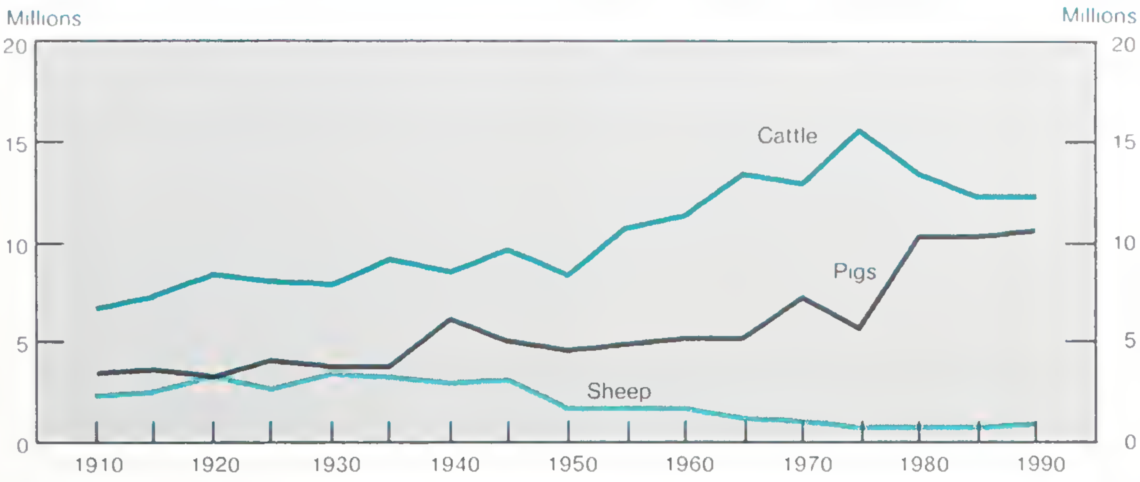
FARM FAMILIES

In 1986, the 260,310 farm families in Canada comprised just under 950,000 people. Two-member farm families increased from 25% of the total in 1981 to 29% in 1986.

The total average income of farm families fell by 5% from 1980 to 1985. Farm families with the lowest incomes reported between $10,000 and $50,000 of agricultural product sales. In contrast, families with sales of less than $10,000 had higher average incomes, largely because of higher outside earnings.

Farm families specializing in poultry production had the highest average income ($42,575) in 1985, while families specializing in pig breeding had the lowest ($31,348).

Chart 15.3
LIVESTOCK ON FARMS



FARM SPOUSES

The average age of spouses of farm operators was 45 in 1986, compared to 48 for the operators themselves. Both operators and their spouses had an average of 11 years of schooling. Farm spouses contributed 23% of family income in 1985. However, half of the farm spouses who declared agriculture as their primary occupation in 1986 worked without pay.

15.4 AGRICULTURAL TRENDS IN THE 1980S

THE INTERNATIONAL MARKET

The major industrialized nations are net exporters of agricultural products: Canada exports 51% of its total production. In the 1980s, world trade in agricultural products was hindered by low commodity prices and limited access to markets, largely as a result of oversupply due to the subsidy programs of major exporting countries. These countries have also shielded markets at home from international market forces, which has led to agricultural trade wars, particularly between the European Economic Community (EEC) and the United States.

The trade distortions that protectionism and unrestricted production create have been recognized as a problem by the 24 member nations of the Organization for Economic Cooperation and Development (OECD). Despite general agreement that changes in international marketing are necessary, the agriculture issue remained unresolved at the 1991 round of the General Agreement on Tariffs and Trade (GATT) negotiations.

CANADIAN PRODUCTION AND CONSUMPTION TRENDS

Significant rises in global wheat production during the 1980s made it more difficult to sell Canadian wheat. Inconsistent growing conditions caused production to fluctuate dramatically during the decade. The result was large annual variations in wheat exports, which ranged from 12.6 to 25.3 million metric tons. Still, Canada supplied about 16.5% of the world market.

CANADA'S FIRST FARMER

Canada's first farmer was Louis Hébert. In 1617, he and his wife, Marie Rollet, planted grain, vegetables and Normandy apples on land near Quebec City. A Parisian apothecary by trade, Hébert had visited Canada three times between 1604 and 1613 with expeditions of explorers and colonizers such as Sieur de Monts, Samuel de Champlain and Jean de Biencourt de Poutrincourt.

In 1613, he settled in Quebec where he farmed 10 arpents or 3.4 hectares of land. The area where his farm once stood is now the site of the cathedral of Quebec.

THE CHANGING CANADIAN DIET

National Archives of Canada/C 42648

Farm scene, 1908.

Canadians have been changing their eating habits in the last 20 years, increasingly replacing red meat with poultry and fish, while cutting down on eggs and butter in favour of low-fat milk, cheese and yogurt. Fresh vegetables have also become more popular with rising concerns over nutrition and the recent linkages of certain foods to heart disease, cancer and other illnesses.

Before the 1970s, however, Canadians were eating increasing amounts of red meat. Indeed, from the 1920s until the mid-1970s, both red meat and poultry consumption increased, from 51 kg to 84 kg per person for red meat and from 3 kg to 20 kg per person for poultry. By 1989, average yearly consumption of red meat had dropped to 70.2 kg, while poultry consumption continued to rise to 27.7 kg. Chicken use accounted for most of the poultry increase, both because it is perceived as a leaner substitute for red meat and because of its increased use by food services. It should also be noted, however, that the beef and pork currently available to Canadians is much leaner than it used to be.

Fish consumption rose from the 1960s to the 1970s, but has stabilized in recent years at about 6.8 kg per person. Cured and canned fish are becoming less popular than fresh and frozen.

Egg consumption, on the other hand, has dropped considerably, with each Canadian now averaging four dozen fewer eggs annually than in the late 1960s, reflecting widespread concern about dietary cholesterol. For the same reason 2% milk and skim milk consumption has increased at the expense of standard milk. Cheese consumption, however, more than doubled between 1967 and 1988, with the rise in popularity of manufactured variety cheeses and of fast food products like pizza.

John Boyd/National Archives of Canada/RD-54

Making maple sugar, circa 1910.

Production of canola, Canada's major oilseed, rose significantly in the 1980s. The global market for this high quality edible oil will likely continue to expand. In Eastern Canada, varieties of soybeans developed in the 1980s are becoming increasingly popular crops.

Barley continues to be the major feed grain in Western Canada; in the East, corn is most important. Exports of feed grains are relatively small compared to wheat exports.

John Boyd/National Archives of Canada/PA 60740

Berry farming.

Fats and oils consumption too has grown since the 1960s, although taste for specific products has changed. Average butter use was cut in half between 1967 and 1988, while margarine's popularity rose steadily between the late 1960s and mid-1980s, before beginning to decline.

Meanwhile, the consumption of fresh vegetables increased dramatically, from 34 kg per person in 1967 to 57 kg in 1988. Average cauliflower consumption nearly quadrupled in that time, while broccoli consumption grew tenfold to its present 2.1 kg per person. Consumption of mushrooms and carrots also increased, though potato use fluctuated from year to year, averaging between 60 kg and 80 kg per person.

Fresh fruit consumption rose from 1967 to the mid-1970s, then generally fluctuated just above 60 kg per person. Juice consumption, however, more than doubled from 20 kg per person in 1967 to 41 kg in 1988. There has also been a trend lately away from traditional fresh fruits toward more "exotic" varieties like kiwis, pineapples and mangoes.

Canadians are also eating more cereals today, averaging 76 kg per person in 1989, with rising consumption of both rice and breakfast cereals. The trends reflect perhaps both the growing Asian population in Canada and the new preoccupations with convenience and dietary fibre.

Health concerns were reflected too in the falling consumption of refined sugars, which had dropped to 40 kg per person by 1988 from 47 kg in 1973, although the totals do not include the sugar content of processed foods.

Among beverages, coffee use has remained relatively stable over the last 20 years, while tea's popularity peaked in 1974, then dropped. Canadians now drink significantly more soft drinks, however, averaging 90 litres per person in 1988, up from 62 litres in 1974. Meanwhile, sales of alcoholic beverages have been growing slightly on the whole, although distilled spirit sales are falling, and "lighter" beverages such as "lite" beers and wine coolers are becoming more popular.

B.J. Woodruff/National Archives of Canada/C-9653

Packing apples.

John Mickelthwaite/National Archives of Canada/PA 150434

The milk truck, 1939.

Domestic consumption of red meat declined to 70.2 kg per capita in 1989: the record high was 81.6 kg in 1976. Beef consumption was stable at 37.6 kg per capita during the 80s, but pork consumption declined to 29.3 kg in 1989 from a record high of 33.1 kg in 1980. In July 1990, Canada's farmers owned 10.5 million pigs and 12.3 million cattle and calves.

FARMING TECHNOLOGY

Before the advent of farm machinery, there were essentially only two ways to work on a farm: by the strength of one's hands or one's horse.

With the introduction of the steam engine in the 1890s, threshing machines could be powered, but the machinery was often too expensive for farmers and still took 10 to 30 people to operate.

A quicker and less expensive way to work was introduced in the early 1900s. The "tractor" was noisy, but it carried its own fuel and water and was easier to operate. Improvements gradually made it more reliable, lightweight and inexpensive and it rapidly gained popularity.

By the 1920s, the tractor had replaced the steam engine. During the same period, the first "combine" was developed. It could replace almost a dozen workers and was the most significant technological advance to date. Indeed, the "combine" combined threshing and harvesting and revolutionized Canada's grain farms.

With the marriage of worker and machine, Canada's crop yields skyrocketed. In 1901, crops totalled some 134 million bushels of grain and by 1928 had reached 544 million bushels.

John Boyd/National Archives of Canada/PA-71235

Early Canadian farming scene.

Annual per capita consumption of poultry increased 23% in the 1980s, rising to 27.7 kg by 1989. Factors in this increase included health concerns, increased availability in fast food outlets, and favourable prices. From 1981 to 1989, per capita egg consumption decreased 12% to 16.4 dozen.

Milk consumption was relatively stable in the 1980s, but this was not the case for other dairy products. Cheese consumption rose an average of 4% a year for cheddar, and 8% a year for "variety" cheeses. Yogurt consumption in 1989 was 241% higher than in 1979. On the other hand, butter consumption decreased steadily from 1983 to 1989. Milk with lower butter fat content is claiming an increasing share of the market.

CANADIAN FARM INCOME TRENDS

Three different measures of farm income are computed by Statistics Canada. The simplest, **net cash income**, is derived by subtracting operating expenses (after rebates) from cash receipts. From 1981 to 1989, net cash income rose 18% to $6.7 billion. The worst year was drought-stricken 1985; the best year was 1988, the third consecutive year of increasing cash receipts with little change in farm expenses.

Realized net income accounts for depreciation and the value of agricultural goods produced and consumed on the farm. From 1981 to 1989, realized net income increased 28% to $4.1 billion.

Total net income is obtained by adjusting realized net income to account for changes in farm inventory during the year and for the costs of managing unpaid labour. Because the value of inventory can fluctuate widely, this measure is sometimes volatile. From 1981 to 1989, total net income grew 23% to $4.9 billion.

However, when these measures are expressed in constant 1986 dollars, all three declined from 1981 to 1989 — net cash income by 17%, realized net income by 10%, and total net income by 13%.

The two determinants of net income — cash receipts and farm expenses — both increased over the decade, the former by 22% and the latter by 20%. However, government payments and rebates were instrumental in both cases. Direct program payments, which enhance receipts, jumped 267%; direct rebates, which reduce expenses, rose 81%.

15.5 AGRICULTURAL MARKETING AND PRODUCT CONTROLS

PRODUCT STANDARDS

Government efforts to encourage a productive agricultural sector initially emphasized increasing production and controlling pests and diseases. At the same time, grading procedures and standards were introduced to ensure quality. Today, federal and provincial departments of agriculture co-operate in enforcing quality standards.

Agriculture Canada has some control over the sizes and types of containers used for food products, while Consumer and Corporate Affairs Canada enforces regulations on weights and measures. Health and sanitation standards for food handling include provincial and municipal laws requiring milk pasteurization, regular inspections of slaughter houses, and maintenance of sanitary conditions in restaurants. Agriculture Canada inspects meat carcasses traded interprovincially. Health and Welfare Canada oversees food composition standards, and Consumer and Corporate Affairs Canada ensures that advertising of food products is fair.

Western Development Museum/National Archives of Canada/PA 37874

Horse-powered farming, early 1900s.

MARKETING CONTROLS

Farm products are marketed through private trading, public sales and auctions, sales under contract, and through co-operatives and marketing boards. Most agricultural products are covered by marketing control legislation; farmers' marketing co-operatives are also covered by legislation.

Marketing problems emerged in Canada as farm production and specialization began to increase. Producers had an increasingly difficult time bargaining equitably with fewer and fewer buyers. To increase their bargaining power, they formed voluntary marketing co-operatives. Over time, the provinces passed legislation allowing co-operatives to incorporate; most provinces also provided financial assistance. Federally, the 1939 Agricultural Products Co-operative Marketing Act guaranteed prices for producers willing to market their crops on a pooling-of-returns basis. (For more information on co-operatives, see Chapter 18.)

Co-operatives were initially successful, but because they were voluntary, in good times many members dropped out to make their own deals. To eliminate this weakness, marketing control legislation created marketing boards, agencies and commissions for a number of key agricultural products. This approach had been introduced in 1935, when the Canadian Wheat Board became the sole marketing agency for Prairie wheat.

National Film Board/National Archives of Canada/PA 127038

Testing the chemical content of Canada's soil.

(Because of its pivotal role in Canadian agriculture, grain production and marketing is covered separately in Section 15.6. Other marketing agencies are discussed below.)

The Canadian Dairy Commission Established in 1966, the Commission stabilizes the market by offering fixed prices for butter, skim milk powder and other major dairy products. The Commission also pays subsidies to producers of milk and cream to keep consumer prices at reasonable levels.

In 1971, the Canadian Dairy Commission and the milk marketing agencies of Ontario and Quebec agreed to a comprehensive plan for balancing supply and demand and for generating funds to help increase exports. The plan established a market-sharing quota system for milk and cream producers; over the next three years the other provinces joined the program. Prices for deliveries that exceed a producer's quota are based on world prices for surplus dairy products.

Producer marketing boards Introduced during the 1930s, provincial boards give agricultural producers legal authority under certain conditions to control the marketing of their produce. Participation in these boards is compulsory.

Usually, a new board must be approved by a majority of producers of the product. If this occurs, every producer must then market under authority of the board. The board often negotiates an acceptable price, and may also set production or marketing quotas and designate times and places for marketing.

Provincial marketing boards have jurisdiction only within the province. Under the 1949 Agricultural Products Marketing Act, the federal government can delegate powers to a marketing board for interprovincial and export trade.

Mines and Resources/National Archives of Canada/PA-21396

Dairy farmer off to market . . .

THE CANADIAN COW

It is a little known fact that Jacques Cartier was one of the first explorers of Canada to bring cows to this country. He brought them from France when he made his first voyage to this continent in 1534.

In 1606, cows were imported to Acadia, and in 1610 cows were shipped to New France by Samuel de Champlain. The first cattle brought to Acadia died during English raids, but more were shipped to the colony in 1632. Available records show that there were 1,500 cattle in the Minas Basin when the Acadians were expelled in 1775. When the United Empire Loyalists migrated to New Brunswick from New England, from 1778 to 1785, they brought cattle to form the foundation stock for the agricultural community, but even before they arrived, settlers in the upper regions of the Miramichi had cattle.

The Hudson's Bay Company helped in the shipment of cattle from England to the Red River Settlement. Lord Selkirk, after his first visit to the colony, sent a shipment of dairy cattle to York Factory, but many were lost in the trek to Fort Garry and others were slaughtered in Indian raids. Still, enough survived to form the dairy herds that were built up in the colony. In the far West, Sir James Douglas, acting on behalf of the Hudson's Bay Company, had cattle shipped in from California to the delta and mainland areas of British Columbia.

According to a census taken by Jean Talon in 1667, there were 3,107 head of cattle in New France. After Confederation, a national Census of Agriculture was taken in 1871 and cattle numbers have been collected consistently in every census since then.

In January 1991, Statistics Canada estimated there were 11.2 million head of cattle in Canada, which included 1.4 million dairy cows.

National marketing agencies The 1972 Farm Products Marketing Agencies Act allows the federal government to establish national marketing agencies at the request of producers and provincial authorities. These agencies are needed for agricultural commodities that cannot be effectively marketed by individual provincial boards. The four national agencies created so far cover table eggs, turkey, chicken and broiler hatching eggs. The National Farm Products Marketing Council — comprising representatives from producer, consumer and labour groups — works with marketing agencies and provincial governments to improve interprovincial and international marketing of regulated products.

15.6 GRAINS

Grains and oilseeds represented about 70% of Canada's $9 billion in food and agricultural exports in 1989, making the grain industry Canada's premier agricultural sector.

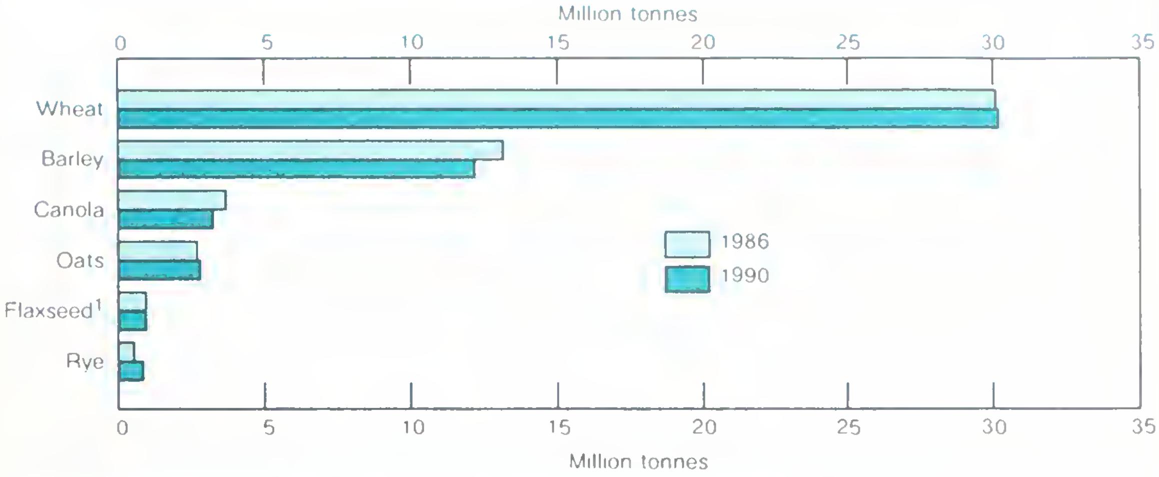
The federal government's involvement in the grains industry predates Confederation. Government policies and programs cover land use and settlement, transportation, grain storage, handling, forwarding, marketing and income security. The government also helps grain producers deal with the many ramifications of international competition — Canada has been a leading participant in the search for international co-operation in grain sales.

The key government agencies in the grains industry are the Grains and Oilseeds Branch of Agriculture Canada, the Canadian Grain Commission, and the Canadian Wheat Board. The Grain Commission and the Wheat Board are semi-autonomous, reporting to Parliament through the Minister of State (Grains and Oilseeds).

The grains industry supports two important agencies. The Canadian International Grains Institute helps expand markets for Canadian grains and oilseeds through research and education. The Canada Grains Council identifies issues in the grains sector, offers an industry perspective on government policy, and co-ordinates efforts to increase efficiency and Canada's share of world markets.

Chart 15.4

PRODUCTION OF GRAIN IN THE WESTERN PROVINCES



[1] BC not included in total.

GRAINS AND OILSEEDS BRANCH, AGRICULTURE CANADA

This Branch was established in 1986 to develop, analyze and manage Canada's domestic and international grains and oilseeds policies and programs. The Branch also oversees income stabilization programs, and gives producers information on world conditions before spring seeding, and at other critical times during the year.

The Branch's Grain Marketing Bureau deals with international trade concerns that affect grains and oilseeds. It is closely involved with implementing the Canada–US Free Trade Agreement, and with negotiating Canada's multilateral trade. The Bureau also helps establish Canadian Wheat Board payments to farmers for wheat and barley.

Based in Winnipeg, the Branch's National Grains Bureau works with industry to develop national policies. For example, in the Grains 2000 program, industry representatives help develop and evaluate domestic policy options.

The Branch also has a co-operatives secretariat.

CANADIAN GRAIN COMMISSION

Established in 1912 by the Canada Grain Act, the Canadian Grain Commission regulates grain handling in Canada, and establishes and maintains standards of quality for Canadian grains. Commissioners develop policies, deal with enquiries from grain producers and supervise the operations of licensed primary elevators. The Commission also supervises grain futures trading and examines appeals on official grading of grain.

Quality control of grains moving through the handling system is maintained by the Commission's Inspection Division. The Weighing Division supervises the weighing of grain at elevators and audits grain stocks to ensure that all grain is accounted for during shipment. The Grain Research Laboratory assesses the quality of new crops, conducts basic and applied research, and supplies technical assistance to marketers. The Economics and Statistics Division issues dealer and elevator licences, monitors security, allocates rail cars, conducts economic studies and publishes statistics.

CANADIAN WHEAT BOARD

The Canadian Wheat Board is the sole purchaser and seller of Prairie feed wheat and barley for export, and also controls the domestic marketing of these crops for human consumption. Other crops, such as oats, rye, rapeseed, flaxseed, buckwheat and mustard are sold on the open market.

Under the Board's system, quotas of grain are delivered by producers to local elevators. The grain is then moved by rail to large terminals in Eastern Canada, Thunder Bay, Churchill and on the West Coast.

IN CANADA'S WHEATFIELDS . . .

In the 1840s in Peterborough, Ontario, a farmer named David Fife chose a strain of wheat from a variety of samples. He called it Red Fife, and it became the main variety of wheat grown in Canada in the 19th century.

The wheat grew well, even in Canada's short growing season, but it was a gamble on the Prairies where the weather was drier and the growing season even shorter.

In 1907, Charles Saunders, chief wheat researcher at the Experimental Farms and son of William Saunders, the farm's director, began field-testing a new type of wheat. It was a hybrid of Red Fife and Red Calcutta, called Marquis. The summer it was tested was short, but even in harsh conditions, the Marquis ripened eight days earlier than other varieties and produced a good harvest.

In 1911, it was distributed to Canadian farmers. That year the country produced 75 million bushels of wheat, three times as much as in 1901. Farmers' incomes jumped by $100 million a year and by 1918, Canada was the world's second largest wheat exporter.

Marquis was a farmer's dream and nearly 90% of Prairie farmers relied on it; but in 1916, a wheat rust epidemic revealed the wheat's weakness. Marquis did not resist the plant disease as well as Red Fife and scientists began formulating other rust-resistant strains of wheat such as Selkirk, Manitou, Neepawa and Thatcher, which are still used today.

Producers normally receive payment in two stages. An initial price is established by order-in-council before the start of the crop year; this price, less handling costs to Thunder Bay or Vancouver, is effectively a government-guaranteed floor price. When sales revenues minus marketing costs are lower than this price, the deficit is borne by the federal treasury. However, surplus revenues are distributed to producers. In years when a surplus is virtually assured, interim payments are made.

Feed grain for domestic use can be sold to the Wheat Board or on the open market. In the latter case, the producer receives the full price when the grain is delivered to the elevator.

THE THRESHERS ARE COMING . . .

When Western Canada's wheat production stepped up in the late 1800s, there were not enough people to harvest the crops.

Technology was slowly being introduced to farms, but it often took 10 or more people to operate the machinery. To cope with the problem, harvest excursions were organized to bring workers in from other provinces. Planning the yearly excursion took place in July when government and railway representatives met to decide how many workers would be needed. Notices were posted in train stations and labourers were given reduced travel rates.

In 1890, the first contingent of 292 'threshers' came to work on the wheatfields of Western Canada. They came from Eastern Canada, the United States and even further abroad. The stories of these teams are legendary. It was not uncommon for them to work 15 hours a day, six days a week. To fuel the enormous amount of energy this required took huge quantities of food and six 'square' meals a day were often the rule.

In 1923, some 50,000 workers participated in the harvesting activity. Towards the thirties, however, labour-saving devices were adopted and the need for these teams gradually disappeared.

15.7 OTHER GOVERNMENT INVOLVEMENT

Under Canada's Constitution, agriculture is a shared federal/provincial responsibility. The federal government focuses on research, policy, standards, quality assurance and regional development; the provinces focus on research, policy and extension work. These efforts aim to ensure that farmers receive adequate incomes while producing high quality, affordable food.

AGRICULTURE CANADA

Agriculture Canada helps maximize agriculture's contribution to Canada's economy by promoting growth, stability and competitiveness. The department's responsibilities cover three broad areas: promotional and regulatory services, research, and assistance programs.

Promotional and regulatory services include improving crops and livestock, inspecting and grading agricultural products, controlling insect pests and diseases, registering pesticides and fertilizers, and developing markets.

Research solves practical farm problems in resource management, crop and animal production and various aspects of food production.

Assistance programs concentrate on stabilizing prices and compensating producers when harvests are bad or a farm fails.

To help maintain the prominence of Canada's agricultural sector in domestic and international markets, Agriculture Canada has exhaustively reviewed its policies covering farm products processing. New strategies for this industry must accommodate regional diversity and stimulate independence and responsiveness to market demands.

FEDERAL FARM ASSISTANCE PROGRAMS

The assistance programs administered by Agriculture Canada and by the agencies reporting to the Minister of Agriculture contribute to a stable agricultural industry and food supply.

Price stabilization and production management programs guarantee stable incomes. Other income support programs help farmers cover expenses during periods of depressed prices. The federal government contributes to provincial crop insurance programs that protect farmers against losses caused by natural forces such as hail, drought and insects. Other programs help finance farm improvements and expansions, offer marketing assistance, and help producers purchase feed grain. (Table 15.17 highlights various federal farm assistance programs.)

PROVINCIAL ASSISTANCE

The provinces also support agriculture. Through regional offices and extension programs in rural areas, provincial agriculture departments provide advice on farm management (including crop management, veterinary services and livestock improvement), farm labour, and home design and household budgeting. The departments also support 4-H and other youth groups.

Provincial engineering sections consult on rural water and sewer systems and on farm machinery; in the Prairies and parts of Ontario, they also consult on irrigation and land drainage. Provincial research programs help to develop and apply new technologies and to conserve soil and water.

In partnership with the federal government, the provinces also work to expand markets and the food processing industry.

In several provinces, loans, grants and financial services help farmers upgrade or expand their operations. Most provinces also offer income strengthening and stabilization, as well as fuel rebates, input cost reductions and natural disaster assistance.

Sources

Agricultural Stabilization Board.
Agriculture Canada.
Canadian Dairy Commission.
The Canadian Federation of Agriculture.
Canadian Grain Commission.
Farm Credit Corporation Canada.
National Farm Products Marketing Council.
Provincial Agriculture Departments.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Farming facts*, annual. *21-522.*
- *Agriculture economic statistics*, annual *21-603.*
- *Fruit and vegetable production*, quarterly. *22-003.*
- *Cereals and oilseeds review*, monthly. *22-007.*
- *Grain trade of Canada*, annual. *22-201.*
- *Greenhouse industry*, annual. *22-202.*
- *The dairy review*, monthly. *23-001*
- *Production of poultry and eggs*, annual. *23-202.*
- *Livestock and animal products statistics*, annual. *23-203.*
- *Wool production and supply*, annual. *23-205.*
- *Production and value of honey and maple products*, annual. *23-211.*
- *Agriculture, 1986 Census, 11 volumes, 1987. 96-102 to 96-112.*

TABLES

LEGEND

. . *not available*
. . . *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*
e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

15.1 USE OF FARM LAND, BY PROVINCE, 1981 AND 1986 CENSUS YEARS (HECTARES)

Province	Year	Improved land				Unimproved land	Total area of farms	Total land area
		Under crops	Improved pasture	Summer fallow	Other			
Newfoundland	1981	4,744	4,148	358	1,203	23,004	33,457	37,163,735
	1986	4,876	3,821	384	1,657	25,820	36,561	37,163,735
Prince Edward Island	1981	158,280	36,228	3,027	5,153	80,336	283,024	566,171
	1986	156,497	22,621	2,647	4,550	86,115	272,432	566,171
Nova Scotia	1981	112,782	46,106	5,154	13,941	288,056	466,039	5,284,093
	1986	109,511	36,236	3,910	8,068	258,779	416,506	5,284,093
New Brunswick	1981	130,526	41,479	5,183	14,742	245,972	437,902	7,156,913
	1986	129,475	27,203	4,289	7,945	239,979	408,892	7,156,913
Quebec	1981	1,756,038	443,559	53,077	107,666	1,418,940	3,779,280	135,780,889
	1986	1,744,395	301,132	31,802	60,060	1,501,409	3,638,800	135,780,889
Ontario	1981	3,632,727	657,009	63,309	165,507	1,520,779	6,039,331	91,743,326
	1986	3,457,965	431,285	80,336	125,559	1,551,433	5,646,581	91,743,326
Manitoba	1981	4,420,369	352,507	598,338	132,766	2,231,000	7,734,980	54,770,473
	1986	4,519,334	274,944	509,213	99,584	2,337,148	7,740,226	54,770,473
Saskatchewan	1981	11,740,864	975,364	6,704,464	263,163	6,849,000	26,532,855	57,011,330
	1986	13,325,810	878,726	5,658,250	181,582	6,554,984	26,599,354	57,011,330
Alberta	1981	8,441,242	1,581,443	2,205,468	297,329	7,681,000	20,206,482	63,823,257
	1986	9,162,523	1,376,814	2,127,013	239,685	7,749,303	20,655,340	63,823,257
British Columbia	1981	568,241	266,884	63,528	47,677	1,521,000	2,467,330	89,307,184
	1986	570,843	206,428	81,166	41,831	1,510,790	2,411,060	89,307,184
Canada	1981	30,965,813	4,404,727	9,701,906	1,049,147	21,859,087	67,980,680	922,097,313
	1986	33,181,234	3,559,215	8,499,015	770,526	21,815,765	67,825,756	922,097,313

15.2 HARVESTED AREA AND PRODUCTION OF FIELD CROPS, BY PROVINCE, 1987-90

Field crop and province	Area ('000 ha)				Production ('000 t)			
	1987	1988	1989	1990	1987	1988	1989	1990
Wheat								
Prince Edward Island	5.2	6.1	5.7	5.7	18.5	19.8	20.2	17.9
Nova Scotia	2.8	3.2	2.8	2.4	11.5	12.2	11.7	7.6
New Brunswick	4.2	4.0	4.0	3.2	14.0	13.9	13.6	10.4
Quebec	65.0	66.8	51.0	54.6	183.0	175.5	159.0	170.0
Ontario	202.6[r]	311.4	299.2	324.2	675.0[r]	1,113.4	1,093.9	1,355.4
Manitoba	1,963.2	1,950.1	2,094.1	2,198.1	3,946.5	2,400.9	4,009.1	5,851.2
Saskatchewan	8,256.0	7,769.9	8,041.6	8,287.8	15,241.0	6,858.4	12,456.5	16,846.9
Alberta	2,942.0	2,833.0	3,075.7	3,135.9	5,796.0	5,285.4	6,445.0	6,614.0
British Columbia	44.5	42.5	52.6	50.6	106.0	117.0	125.0	136.0
Total, wheat	13,485.5	12,987.0[r]	13,626.7	14,062.5	25,991.5	15,996.1[r]	24,334.0	31,009.4
Oats								
Prince Edward Island	9.7	9.7	9.3	10.1	23.0	21.7	26.2	23.9
Nova Scotia	6.7	6.3	6.9	8.1	13.3	14.5	15.4	17.0
New Brunswick	12.1	12.1	12.5	12.1	25.9	26.2	29.0	25.4
Quebec	103.0	121.0	125.0	115.0	232.0	284.0	295.0	315.0
Ontario	111.0	121.0	146.0	117.0	259.0	216.0	339.0	287.0
Manitoba	182.0	162.0	202.0	182.0	416.0	224.0	339.0	432.0
Saskatchewan	324.0	324.0	486.0	405.0	709.0	478.0	802.0	833.0
Alberta	486.0	587.0	688.0	627.0	1,249.0	1,650.0	1,619.0	1,511.0
British Columbia	28.3	28.3	32.4	40.5	67.9[r]	78.7	81.7	101.8
Total, oats	1,262.8	1,371.4	1,708.1	1,516.8	2,995.1[r]	2,993.1	3,546.3	3,546.1
Barley								
Prince Edward Island	26.7	27.1	28.3	28.7	84.9[r]	81.2	105.0	78.0
Nova Scotia	5.3	4.9	5.7	7.3	16.3	14.6	18.1	18.5
New Brunswick	10.5	11.7	12.9	12.9	34.8	35.5	45.3	39.2
Quebec	174.0	162.0	154.0	162.0	457.0	460.0	485.0	530.0
Ontario	239.0	198.0	194.0	198.0	784.0	501.0	612.0	638.0
Manitoba	688.0	567.0	647.0	627.0	1,938.0	1,089.0	1,546.0	1,981.0
Saskatchewan	1,538.0	1,234.0	1,497.0	1,416.0	3,919.0	2,090.0	3,005.0	3,701.0
Alberta	2,266.0	1,902.0	2,064.0	2,084.0	6,586.0	5,813.0	5,704.0	6,096.0
British Columbia	56.7	44.5	54.6	54.6	137.0	128.0	146.0	150.0
Total, barley	5,004.2	4,151.2	4,657.5	4,590.5	13,957.0	10,212.3[r]	11,666.4	13,231.7
Fall rye								
Ontario	18.8	22.3	20.2	20.2	38.1	40.6	43.2	43.2
Manitoba	26.3	48.6	93.1	89.0	45.7	58.4	198.0	193.0
Saskatchewan	154.0	101.0	259.0	283.0	218.0	76.2	401.0	470.0
Alberta	72.8	44.5	80.9	89.0	127.0	53.9	155.0	155.0
British Columbia	4.0	4.5	3.6	3.6	7.6	8.9	7.6	8.9
Total, fall rye	276.9	220.9	456.8	484.8	436.4	237.4	804.8	870.1
Spring rye								
Saskatchewan	20.2	16.2	24.3	28.3	30.5	12.7	38.1	43.2
Alberta	16.2	20.2	20.2	20.2	25.4	17.8	30.5	12.7
Total, spring rye	36.4	36.4	44.5	48.5	55.9	30.5	68.6	55.9
All rye								
Ontario	19.8	22.3	20.2	20.2	38.1	40.6	43.2	43.2
Manitoba	26.3	48.6	93.1	89.0	45.7	58.4	198.0	193.0
Saskatchewan	174.2	117.2	283.3	311.3	248.5	88.9	439.1	513.2
Alberta	89.0	64.7	101.1	109.2	152.4	71.1	185.5	167.7
British Columbia	4.0	4.5	3.6	3.6	7.6	8.9	7.6	8.9
Total, all rye	313.3	257.3	501.3	533.3	492.3	267.9	873.4	926.0
Peas								
Manitoba	72.8	72.8	52.6	40.5	144.0	78.9	78.9	81.6
Saskatchewan	154.0	172.0	72.8	60.7	250.0	158.0	95.3	111.6
Alberta	26.3	48.6	44.5	40.5	47.6	110.0	92.5	92.5
Total, peas	253.1	293.4	169.9	141.7	441.6	346.9	266.7	285.7

15.2 HARVESTED AREA AND PRODUCTION OF FIELD CROPS, BY PROVINCE, 1987-90 (continued)

Field crop and province	Area ('000 ha)				Production ('000 t)			
	1987	1988	1989	1990	1987	1988	1989	1990
Beans (dry white)								
Ontario	56.7	42.5	48.6	60.7	116.0	63.5	77.1	122.5
Total, beans	56.7	42.5	48.6	60.7	116.0	63.5	77.1	122.5
Soybeans								
Quebec	8.0	15.0	17.5	18.2	17.8	28.6	43.0	48.0
Ontario	453.0	518.0	522.0	486.0	1,252.0	1,124.0	1,176.0	1,211.0
Total, soybeans	461.0	533.0	539.5	504.2	1,269.8	1,152.6	1,219.0	1,259.0
Buckwheat								
Quebec	11.3	8.5	8.5	8.5	15.0	12.0	10.4	13.0
Ontario	6.2	6.9	7.3	8.1	8.9	6.3	7.2	8.7
Manitoba	16.0	20.2	20.2	24.0	20.2	12.4	14.6	20.7
Total, buckwheat	33.5	35.6	36.0	40.6	44.1	30.7	32.2	42.4
Mixed grains								
Prince Edward Island	25.1	23.1	21.9	21.4	73.5	61.3	72.6	59.0
Quebec	28.0	28.0	28.0	29.5	75.0	75.0	75.0	90.0
Ontario	219.0	206.0	198.0	190.0	635.0	435.0	550.0	541.0
Manitoba	32.4	28.3	28.3	32.4	81.6	42.9	61.2	77.6
Saskatchewan	24.3	28.3	28.3	32.4	55.1	40.8	44.9	67.4
Alberta	60.7	70.8	72.8	80.9	163.0	204.0	184.0	204.0
British Columbia	1.6	1.6	4.0	4.0	4.1	4.5	11.2	11.8
Total, mixed grains	391.1	386.1	381.3	390.6	1,087.3	863.5	998.9	1,050.8
Flaxseed								
Manitoba	324.0	283.0	283.0	324.0	406.0	198.0	221.0	419.0
Saskatchewan	243.0	202.0	283.0	344.0	290.0	152.0	236.0	406.0
Alberta	24.3	16.2	32.4	52.6	33.0	22.9	40.6	73.7
Total, flaxseed	591.3	501.2	598.4	720.6	729.0	372.9	497.6	898.7
Canola/rapeseed								
Ontario	16.2	26.3	20.2	20.2	29.5	34.0	31.8	43.1
Manitoba	405.0	627.0	465.0	384.0	585.0	612.0	399.0	499.0
Saskatchewan	1,052.0	1,558.0	1,295.0	1,133.0	1,542.0	1,678.0	1,293.0	1,406.0
Alberta	1,153.0	1,416.0	1,093.0	1,052.0	1,633.0	1,905.0	1,338.0	1,270.0
British Columbia	44.5	44.5	30.4	40.5	56.7	59.0	34.0	38.6
Total, canola/rapeseed	2,670.7	3,671.8	2,903.6	2,629.7	3,846.2	4,288.0	3,095.8	3,256.7
Sunflower seed								
Manitoba	28.3	34.4	46.5	60.7	44.5	42.6	63.0	..
Saskatchewan	6.1	6.1	8.1	8.1	7.9	5.0	5.9	
Total, sunflower seed	34.4	40.5	54.6	68.8	52.4	47.6	68.9	.
Mustard seed								
Manitoba	6.1	8.1	12.1	16.2	7.7	8.2	9.1	
Saskatchewan	85.0	132.0	170.0	202.0	100.0	90.7	122.0	
Alberta	22.3	30.4	32.4	36.4	24.5	22.2	34.0	
Total, mustard seed	113.4	170.5	214.5	254.6	132.2	121.1	165.1	.
Shelled corn								
Nova Scotia	1.2	1.0	1.4	1.4	6.4	5.8	8.4	6.4
Quebec	228.0	240.0	260.0	275.0	1,410.0	1,500.0	1,600.0	1,730.0
Ontario	745.0	704.0	704.0	728.0	5,461.0	3,734.0	4,648.0	4,953.0
Manitoba	20.2	32.4	34.4	32.4	109.0	104.0	109.0	142.0
Alberta	4.9	4.0	3.6	2.8	28.4	25.4	14.0	15.2
Total, shelled corn	999.3	981.4	1,003.4	1,039.6	7,014.8	5,369.2	6,379.4	6,846.6

15.2 HARVESTED AREA AND PRODUCTION OF FIELD CROPS, BY PROVINCE, 1987-90 (concluded)

Field crop and province	Area ('000 ha)				Production ('000 t)			
	1987	1988	1989	1990	1987	1988	1989	1990
Potatoes								
Newfoundland	0.2	0.2	0.2	0.2	3.4	3.1	3.5	3.5
Prince Edward Island	26.7	27.3	27.5	30.4	724.5	820.5	832.8	850.5
Nova Scotia	1.7	1.7	1.7	1.8	40.0	42.8	47.8	39.8
New Brunswick	20.0	19.0	20.1	19.8	662.4	553.1	609.9	566.8
Quebec	18.0	17.7	17.4	17.5	410.0	385.0	360.0	385.0
Ontario	14.6	13.9	13.2	13.4	322.5	238.1	279.9	364.5
Manitoba	18.2	17.0	18.1	19.0	426.4	276.2	274.3	351.8
Saskatchewan	1.5	1.5	1.6	1.6	34.4	28.8	34.7	36.8
Alberta	9.6	9.6	10.2	10.3	299.7	291.5	285.8	277.6
British Columbia	3.4	3.1	3.2	3.0	109.5	81.7	82.2	52.2
Total, potatoes	113.9	111.0	113.2	117.0	3,032.8	2,720.8	2,810.9	2,928.5
Tame hay								
Newfoundland	3.8	4.5	4.7	4.7	13.0	21.6	22.7	22.7
Prince Edward Island	55.4	56.3	56.3	56.3	286.0	318.0	381.0	290.0
Nova Scotia	69.2	70.0	70.0	68.8	354.0	463.0	463.0	435.0
New Brunswick	70.0	70.4	70.4	71.2	372.0	381.0	426.0	417.0
Quebec	986.0	986.0	991.0	991.0	6,500.0	6,160.0	6,230.0	7,000.0
Ontario	1,032.0	1,036.0	1,040.0	1,032.0	7,711.0	6,622.0	7,348.0	7,439.0
Manitoba	627.0	647.0	647.0	668.0	2,903.0	1,724.0	2,540.0	3,084.0
Saskatchewan	809.0	830.0	830.0	850.0	2,540.0	1,724.0	2,449.0	2,722.0
Alberta	1,760.0	1,882.0	1,862.0	1,882.0	8,165.0	9,072.0	8,890.0	9,525.0
British Columbia	340.0	356.0	352.0	352.0	1,996.0	2,540.0	2,087.0	2,177.0
Total, tame hay	5,752.4	5,938.2	5,923.4	5,976.0	30,840.0	29,025.6	30,836.7	33,111.7
Fodder corn								
Nova Scotia	2.1	2.1	2.0	2.1	59.0	55.0	59.0	47.0
Quebec	58.0	57.0	57.0	52.6	2,000.0	1,940.0	1,720.0	1,800.0
Ontario	162.0	154.0	152.0	150.0	5,806.0	4,082.0	4,445.0	5,080.0
Manitoba	10.1	10.1	12.1	12.1	209.0	145.0	227.0	272.0
Alberta	7.3	7.3	6.1	6.1	227.0	272.0	181.0	181.0
British Columbia	10.9	10.5	10.9	10.5	390.0	499.0	590.0	354.0
Total, fodder corn	250.4	241.0	240.1	233.4	8,691.0	6,993.0	7,222.0	7,734.0
Sugar beets								
Manitoba	10.4	9.0	10.5	10.9	424.0	227.0	295.0	
Alberta	11.9	11.7	12.0	13.5	565.0	544.0	499.0	
Total, sugar beets	22.3	20.7	22.5	24.4	989.0	771.0	794.0	

15.3 LIVESTOCK FACTS, BY PROVINCE

Item	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Total
Number of cattle ('000 head) July 1, 1990	9	97	128	105	1,413	2,250	1,075	2,160	4,310	740	12,287
Number of pigs ('000 head) July 1, 1990	16	117	135	84	2,975	3,181	1,240	790	1,760	234	10,532
Number of sheep and lambs ('000 head) July 1, 1990	7	5	34	10	118	215	24	56	233	58	759
Poultry production (tonnes) 1989	6,927	1,471	19,421	15,016	169,909	195,041	25,659	17,358	47,985	66,477	565,264
Turkey production (tonnes) 1989	—	24	3,132	2,047	27,407	52,238	9,002	4,734	9,850	11,998	120,432
Egg production ('000 doz.) 1989	8,136	2,862	19,185	10,675	82,499	181,409	54,956	19,682	38,248	59,298	476,950
Milk and cream production ('000 kilolitres) 1989	—	99	175	134	2,873	2,454	302	225	585	494	7,341[1]

[1] *As of October 1988, Nfld. data are excluded from Canada total for reasons of confidentiality.*

15.4 CENSUS-FARMS CLASSIFIED BY SALES CLASS AND PROVINCE, 1981 AND 1986 CENSUS YEARS

Province	Year	Number of farms with sales of							Total
		$100,000 and over	$50,000-99,999	$25,000-49,999	$10,000-24,999	$5,000-9,999	$2,500-4,999	Under $2,500	
Newfoundland	1981	78	35	35	68	64	104	295	679
	1986	110	43	41	77	67	77	236	651
Prince Edward Island	1981	381	414	473	569	386	362	569	3,154
	1986	553	433	422	496	292	262	375	2,833
Nova Scotia	1981	515	388	342	601	634	689	1,876	5,045
	1986	735	333	316	641	578	567	1,113	4,283
New Brunswick	1981	383	423	382	477	501	536	1,361	4,063
	1986	644	369	296	511	466	490	778	3,554
Quebec	1981	4,145	8,500	8,825	7,509	4,562	4,643	9,960	48,144
	1986	9,121	8,378	5,638	5,590	4,016	4,417	4,288	41,448
Ontario	1981	12,559	12,510	10,963	13,952	10,158	8,818	13,488	82,448
	1986	16,436	10,453	9,034	12,620	8,842	5,868	9,460	72,713
Manitoba	1981	3,191	5,530	6,394	6,308	3,053	2,041	2,925	29,442
	1986	5,878	5,905	4,839	4,807	2,310	1,523	2,074	27,336
Saskatchewan	1981	5,813	15,453	18,961	15,392	5,773	2,950	2,976	67,318
	1986	10,947	16,998	14,670	11,649	4,304	2,241	2,622	63,431
Alberta	1981	7,327	9,873	11,049	12,003	6,387	4,525	6,892	58,056
	1986	11,364	10,549	9,842	10,244	5,697	4,047	6,034	57,777
British Columbia	1981	2,154	1,346	1,748	2,802	2,487	3,060	6,415	20,012
	1986	2,616	1,231	1,757	2,832	2,456	2,807	5,364	19,063
Canada	1981	36,546	54,472	59,172	59,681	34,005	27,728	46,757	318,361
	1986	58,404	54,692	46,855	49,467	29,028	22,299	32,344	293,089

15.5 CENSUS-FARMS WITH SALES OF $2,500 OR MORE, CLASSIFIED BY PRODUCT TYPE AND PROVINCE, 1986

Product type	Province										
	Nfld.	PEI	NS	NB	Que	Ont	Man.	Sask.	Alta.	BC	Canada
Dairy	68	584	698	631	15,906	11,028	1,412	881	1,828	1,150	34,186
Cattle	45	652	979	739	5,763	17,160	4,682	7,866	17,110	4,266	59,262
Hogs	17	221	132	125	2,749	4,840	1,111	906	1,635	290	12,026
Poultry	54	28	127	96	893	1,643	356	166	533	752	4,648
Wheat	—	4	1	7	217	733	6,272	30,968	8,504	151	46,857
Small grains (excl. wheat farms)	—	90	62	62	2,922	13,693	8,758	16,942	15,403	663	58,595
Field crops, other than small grains	13	474	45	384	771	1,988	415	285	1,187	356	5,918
Fruits and vegetables	94	60	457	252	2,250	4,089	100	36	119	2,920	10,377
Miscellaneous specialty	75	149	481	313	4,051	4,203	731	609	1,944	1,893	14,449
Mixed farms											
Livestock combination	12	127	42	45	382	1,653	615	1,064	1,399	238	5,577
Other combinations[1]	37	69	146	122	1,256	2,223	810	1,086	2,081	1,020	8,850
Total	415	2,458	3,170	2,776	37,160	63,253	25,262	60,809	51,743	13,699	260,745

[1] *In 1986, includes "field crops combination".*

15.6 NUMBER AND PERCENTAGE OF FARM OPERATORS, BY SEX, 1971, 1981 AND 1986

Sex	1971	1981	1986
Number of operators	367,195	318,360	293,090
Percentage	100	100	100
Male	352,880	307,125	279,785
Percentage	96.1	96.5	95.5
Female	14,315	11,235	13,300
Percentage	3.9	3.5	4.5

15.7 FARM OPERATORS' AVERAGE TOTAL INCOME AND PERCENTAGE CONTRIBUTION OF NET FARM INCOME TO TOTAL INCOME, BY FARM PRODUCT TYPES, 1985

Farm product types	Average total income ($)	Contribution of net farm income to total income	
		Percentage	Rank
Poultry	30,753	35	6
Miscellaneous specialties[1]	26,325	10	11
Fruit	25,703	17	9
Wheat	23,750	45	3
Other types	23,644	15	10
Dairy	23,527	65	1
Vegetable	22,431	29	7
Small grains	21,704	36	5
Other field crops	20,595	35	6
Cattle	20,228	20	8
Pig	20,117	46	2
Livestock combination	18,411	37	4

[1] *Included in this type are greenhouses, nurseries, mushroom houses, sheep farms, horse farms, apiaries, fur and goat farms.*

15.8 FARM OPERATORS, BY LEVEL OF SCHOOLING, 1971, 1981 AND 1986

Year	Number of farm operators	Level of schooling		
		Less than Grade 9	Grades 9-13	Postsecondary
1971	367,190	211,085	122,535	33,575
1981	318,365	111,165	123,260	83,940
1986	293,090	86,140	120,300	86,645

15.9 NUMBER AND PERCENTAGE OF FARM FAMILIES, BY PROVINCE, 1986

Province	Number	Percentage
Newfoundland	605	—
Prince Edward Island	2,610	1
Nova Scotia	3,935	2
New Brunswick	3,330	1
Quebec	38,790	15
Ontario	66,940	26
Manitoba	23,395	9
Saskatchewan	52,545	20
Alberta	50,605	19
British Columbia	17,555	7
Total	260,310	100

15.10 SUPPLY AND DISPOSITION OF CANADIAN GRAIN, CROP YEARS ENDED JULY 31, 1987-88 TO 1989-90 (THOUSAND TONNES)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Canola/rapeseed
Crop year 1987-88						
Carryover, Aug. 1, 1987	12,731	1,014	3,172	400	442	619
Production in 1987	25,992	2,995	13,957	492	729	3,846
Imports	—	—	1	8	—	9
Total, supply	38,723	4,009	17,130	901	1,171	4,474
Exports	23,519	286	4,594	221	624	1,750
Domestic use	7,899	2,826	8,829	350	135	2,073
Total, disposition	38,723	4,009	17,130	901	1,171	4,474
Carryover, July 31, 1988	7,305	897	3,707	329	412	651
Crop year 1988-89						
Carryover, Aug. 1, 1988	7,305	897	3,707	329	412	651
Production in 1988	15,996	2,993	10,212	268	373	4,288
Imports	—	—	2	10	—	12
Total, supply	23,301	3,890	13,921	607	785	4,952
Exports	12,413	731	2,879	115	455	1,949
Domestic use	5,855	2,476	8,242	281	149	1,854
Total, disposition	23,300	3,890	13,921	607	785	4,952
Carryover, July 31, 1989	5,032	684	2,800	211	182	1,149
Crop year 1989-90						
Carryover, Aug. 1, 1989	5,032	684	2,800	211	182	1,149
Production in 1989	24,334	3,546	11,666	873	498	3,096
Imports	—	—	—	—	—	7
Total, supply	29,366	4,230	14,467	1,084	679	4,252
Exports	17,381	744	4,503	295	496	2,041
Domestic use	5,581	2,526	7,900	408	132	1,471
Total, disposition	29,366	4,230	14,467	1,084	679	4,252
Carryover, July 31, 1990	6,404	961	2,064	381	52	740

15.11 EXPORTS OF ALL WHEAT AND WHEAT FLOUR, BY COUNTRY OF FINAL DESTINATION, CROP YEARS 1987-88 TO 1989-90 (THOUSAND TONNES)

Region	1987-88	1988-89	1989-90
Western Europe	1,469.8	1,271.6	1,028.2
United Kingdom	413.2	410.3	272.0
Italy	439.5	409.5	356.6
Eastern Europe	4,649.5	2,728.6	3,598.0
Poland	—	—	32.9
USSR	4,500.2	2,666.0	3,497.0
Middle East	2,564.2	1,074.7	2,738.3
Africa	1,089.6	622.5	1,035.9
Algeria	764.4	337.2	610.8
Asia	10,617.4	5,216.3	7,501.0
People's Republic of China	7,663.9	2,830.2	4,580.8
South America	1,305.2	527.2	599.9
Brazil	448.8	14.3	216.4
Central America and Antilles	1,421.3	685.4	540.0
Cuba	952.7	605.5	434.2
North America	397.3	278.4	332.6
Total	23,514.3	12,404.7	17,373.9

15.12 PER CAPITA SUPPLIES OF FOOD MOVING INTO CONSUMPTION, 1985-88

Kind of food	Weight base	Kg per capita per annum			
		1985	1986	1987	1988
Cereals	Retail weight	72.99	72.60	74.42	76.90
Wheat flour	″	60.96	59.55	61.75	63.25
Rye flour	″	0.32	0.34	0.35	0.35
Oatmeal and rolled oats	″	1.59	1.59	1.68	1.82
Pot and pearl barley	″	[1]	[1]	[1]	[1]
Corn flour and meal	″	[1]	[1]	[1]	[1]
Buckwheat flour	″	[1]	[1]	[1]	[1]
Rice	″	4.00	4.48	4.61	5.01
Breakfast food	″	3.82	4.46	3.88	4.34
Sugar and syrups	sugar content	42.71	42.65	43.89	40.89
Sugar	retail weight	42.52	42.55	43.79	40.63
Maple sugar	″	0.19	0.10	0.11	0.26
Honey	″	.	.		
Other	″	.			
Pulses and nuts	retail weight	4.86	7.22	7.71	7.09
Dry beans	″	0.21	0.62	1.07	0.04
Baked canned beans	″	..	..		.
Dry peas	″	0.78	2.65	3.55	3.85
Peanuts	″	2.70	3.03	2.82	2.30
Tree nuts	″	1.38	1.55	1.33	0.94
Oils and fats	fat content	21.68	21.48	22.59	20.45
Margarine	retail weight	6.50	6.13	5.76	4.69
Shortening and shortening oils	″	8.01	7.86	8.43	8.52
Salad oils	″	5.11	5.49	6.33	4.17
Butter	″	4.10	3.16	3.92	3.08
Lard	″	.	..	.	..
Fruit	fresh equiv.	118.87	120.20	125.48	117.94
Fresh	retail weight	60.41	60.22	61.51	54.24
Canned	net wt. canned	8.46	8.03	8.56	7.80
Frozen	retail weight	1.11	1.08	1.54	1.19
Juice	net wt. canned	22.30	23.54	24.69	25.01
Tomatoes					
Fresh	retail weight	6.89	7.53	7.23	6.12
Canned	net wt. canned	3.34	3.04	3.13	3.37
Juice	″	3.12	2.55	2.79	2.89
Pulp, paste and purée	″	1.91	2.04	2.22	2.23
Ketchup	″	[1]	[1]	[1]	[1]
Citrus fruit					
Fresh	retail weight	13.60	14.95	14.74	11.91
Juice	net wt. canned	11.08	11.90	12.44	12.02
Apples					
Fresh	retail weight	12.11	11.01	11.59	12.80
Canned	net wt. canned	[1]	[1]	[1]	[1]
Juice	″	6.98	7.13	7.83	8.45
Frozen	retail weight	0.12	0.12	0.21	0.13
Sauce	net wt. canned	0.81	0.47	0.66	0.78
Pie filling	″	[1]	0.05	0.16	0.19
Apricots					
Fresh	retail weight	0.11	0.12	0.12	0.16
Canned	net wt. canned	[1]	[1]	[1]	[1]
Bananas, fresh	retail weight	11.32	11.85	12.65	8.84
Blueberries					
Fresh	″	0.21	0.23	0.33	0.29
Canned	net wt. canned	[1]	[1]	[1]	[1]
Frozen	retail weight	0.08	0.18	0.15	0.18
Cherries					
Fresh	″	[1]	0.30	0.63	0.44
Canned	net wt. canned	[1]	[1]	[1]	[1]
Frozen	retail weight	[1]	0.19	[1]	[1]
Cranberries, fresh	″	0.45	0.46	0.56	0.62
Melons, fresh	″	5.26	5.83	5.53	5.59
Peaches					
Fresh	″	[1]	[1]	[1]	[1]
Canned	net wt. canned	0.90	1.08	1.00	[1]
Frozen	retail weight	[1]	[1]	[1]	[1]

15.12 PER CAPITA SUPPLIES OF FOOD MOVING INTO CONSUMPTION, 1985-88 (continued)

Kind of food	Weight base	Kg per capita per annum			
		1985	1986	1987	1988
Pears					
Fresh	retail weight	1.99	[1]	[1]	2 28
Canned	net wt. canned	[1]	[1]	[1]	[1]
Pineapples					
Fresh	retail weight	0.43	0.50	0.55	0.46
Canned	net wt. canned	1.29	1.10	1 15	1 21
Juice	"	0.33	0.31	0.26	0 17
Plums					
Fresh	retail weight	[1]	[1]	[1]	[1]
Canned	net wt. canned	0.03	[1]	[1]	[1]
Raspberries					
Fresh	retail weight	0.23	0.01	0.05	[1]
Canned	net wt. canned	[1]	[1]	[1]	[1]
Frozen	retail weight	0.50	0.23	0.58	0.48
Strawberries					
Fresh	retail weight	1.89	1.69	1.80	1.96
Canned	net wt. canned	[1]	[1]	[1]	[1]
Frozen	retail weight	0.41	0.36	0.61	0.39
Grapes, fresh	"	5.89	5.72	5.74	6.35
Unspecified					
Fresh	"				
Canned	net wt. canned	[1]	[1]	[1]	
Frozen	retail weight	[1]	[1]	[1]	
Juice	net wt. canned				
Jams, jellies, marmalade	processed weight				
Vegetables[2]	fresh equiv.	63.87	67.40	73.03	70.07
Fresh	retail weight	55.17	56.68	57.40	56.88
Canned	net wt. canned	2.88	4.66	6.44	5.26
Frozen	retail weight	3.60	3.74	4.29	3.42
Cabbage, fresh	"	6.12	5.49	5.73	5.03
Lettuce	"	9.76	10.19	10.09	8.06
Spinach, fresh	"				
Carrots					
Fresh	"	7.69	8.33	8.42	8.82
Canned	net wt. canned	0.15	0.21	0.27	0.14
Frozen	retail weight	0.76	1.03	0.73	0.86
Beans					
Fresh	"	0.75	0.74	0.73	0.78
Canned	net wt. canned	1.09	1.01	1.21	0.55
Frozen	retail weight	0.47	0.45	0.66	0.49
Peas					
Fresh	"	0.18	0.09	0.09	0.02
Canned	net wt. canned	0.95	1.26	1.18	0.91
Frozen	retail weight	1.13	0.98	1.53	0.84
Beets					
Fresh	"	0.41	0.31	0.21	0.42
Canned	net wt. canned	0.26	0.21	0.35	0.19
Cauliflower, fresh	retail weight	2.54	3.01	3.07	2.96
Celery, fresh	"	4.33	4.35	4.46	4.60
Corn					
Fresh	"	3.92	3.16	3.92	3.60
Canned	net wt. canned	[1]	[1]	1.88	1.59
Frozen	retail weight	0.59	0.80	0.78	0.71
Cucumbers, fresh	"	2.63	3.03	2.65	3.49
Onions, not processed	"	7.46	7.62	7.09	6.85
Asparagus					
Fresh	"	0.05	0.16	0.14	0.18
Canned	net wt. canned	[1]	0.15	0.13	0.21
Frozen	retail weight	0.01	0.01	0.02	0.03
Rutabagas, fresh	"	2.02	2.18	2.04	2.74
Broccoli					
Fresh	"	1.98	2.32	2.49	2.12
Frozen	"	0.26	0.16	0.26	0.32
Brussels sprouts					
Fresh	"	0.22	0.20	0.19	0.18
Frozen	"	0.17	0.18	0.13	0.13
Unspecified					
Fresh	"	0.83	1.10	1.36	2.12
Canned	net wt. canned	0.31	0.32	0.34	0.43
Frozen	retail weight	[1]	[1]	[1]	

15.12 PER CAPITA SUPPLIES OF FOOD MOVING INTO CONSUMPTION, 1985-88 (concluded)

Kind of food	Weight base	Kg per capita per annum			
		1985	1986	1987	1988
Mushrooms	fresh equiv.	1.39	2.77	2.41	2.47
Fresh	retail weight	1.39	1.53	1.52	1.61
Canned	net wt. canned	[1]	1.50	1.07	1.04
Potatoes	fresh equiv.	64.07	78.90	70.31	68.26
White	"	63.66	77.99	69.93	67.96
Sweet	"	0.41	0.41	0.37	0.30
Meat	carcass weight	72.87	72.73	70.87	70.96
Pork	"	29.74	28.82	28.66	29.28
Beef	"	38.94	39.51	38.17	38.29
Veal	"	1.75	1.76	1.67	1.54
Mutton and lamb	"	0.76	0.92	0.90	0.85
Offal	"	1.69	1.73	1.47	0.99
Canned meat[3]	net wt. canned				
Eggs	fresh equiv.	11.63	11.55	11.28	11.42
Poultry[4]	eviscerated wt.	25.27	25.80	27.36	28.35
Chicken	"	14.82	20.48	21.83	22.70
Fowl	"	1.42	1.08	1.19	1.17
Turkey	"	4.03	4.24	4.34	4.49
Duck	"				
Goose	"				
Fish	edible weight	[1]	7.41	6.84	6.80
Fish and shellfish					
Fresh and frozen[5]	"	4.54	5.24	4.78	4.87
Canned	"	2.28	2.17	2.06	1.93
Fish, cured (smoked, salted, pickled)	"	..			
Beverages					
Tea	tea leaf equiv.	0.51		0.26	
Coffee	green bean equiv.	4.58	4.38	4.60	4.54
Cocoa	"	1.04	0.28	0.12	0.63

[1] *Confidential.*

[2] *Includes pickles, relishes, vegetables used in soups.*

[3] *Per capita consumption not comparable with previous years.*

[4] *Excludes Newfoundland*

[5] *Excludes herring fresh and frozen, and all fish used for bait.*

15.13 INDEX OF APPARENT DOMESTIC CONSUMPTION OF MAJOR DAIRY PRODUCTS, 1982-89

Product	Base year 1979	Total consumption							
		1982	1983	1984	1985	1986	1987	1988	1989
Butter (t)	105,794	100	103	101	98	94	95	94	90
Cheddar cheese (t)	93,115	97	99	104	111	115	118	116	120
Variety cheese (t)	85,548	118	119	117	140	158	168	171	181
Skim milk powder (t)	51,877	118	84	122	89	86	111	101	129
Evaporated milk (kL)	62,611	105	124	63	104	71	83	79	71
Ice cream (kL)	307,669	99	101	98	101	103	101	99	96
Yogurt (t)	36,578	109	121	136	136	180	224	233	241

15.14 PRODUCTION AND UTILIZATION OF MILK, BY PROVINCE, 1979 AND 1989 (THOUSAND KILOLITRES)

Province	1979				1989			
	Total milk shipped	Fluid	Industrial delivered as		Total milk shipped	Fluid	Industrial delivered as	
			Milk	Cream			Milk	Cream
Newfoundland	8	8	—	—	26	26	—	—
Prince Edward Island	90	17	62	11	99	14	79	6
Nova Scotia	168	106	56	6	175	113	60	2
New Brunswick	110	69	31	10	134	68	63	3
Quebec	2,719	591	2,125	3	2,873	697	2,175	—
Ontario	2,387	999	1,297	91	2,454	1,018	1,350	86
Manitoba	280	111	132	37	302	116	156	30
Saskatchewan	192	109	46	37	225	96	118	11
Alberta	508	239	203	66	585	265	306	14
British Columbia	438	295	141	2	495	313	182	—
Canada	6,899	2,543	4,093	263	7,368	2,726	4,489	152

15.15 FARM CASH RECEIPTS, BY SOURCE, CANADA, 1985-89 (MILLION DOLLARS)

Item	1985[r]	1986[r]	1987[r]	1988	1989
Wheat excluding durum	2,253.1	2,222.8	2,257.4	2,221.9	1,818.3
Wheat excluding durum, CWB payments	518.1	327.1	3.0	285.9	439.1
Durum wheat	246.6	238.7	289.9	349.7	351.0
Durum wheat, CWB payments	51.8	42.4	26.0	78.3	131.7
Oats	54.0	48.1	46.6	116.3	151.8
Oats, CWB payments	1.0	1.5	1.2	6.8	10.0
Barley	530.8	744.8	491.8	511.3	684.8
Barley, CWB payments	145.3	44.8	21.7	19.8	61.5
Deferments	−496.0	−430.9	−433.9	−610.0	−507.3
Liquidations	791.5	496.0	430.9	433.9	610.0
Rye	27.1	18.8	18.7	25.2	25.0
Flaxseed	193.9	140.9	112.7	136.8	142.8
Canola	899.6	675.2	722.1	995.0	950.1
Soybeans	231.7	242.1	259.7	324.5	251.6
Corn	585.4	399.5	413.9	514.1	478.4
Sugar beets	12.3	17.7	21.5	28.8	37.1
Potatoes	272.7	287.8	341.3	336.9	418.9
Vegetables	521.0	572.2	600.9	639.0	692.5
Apples	103.4	117.2	109.6	112.6	111.0
Other tree fruits	53.1	45.2	46.6	47.7	49.3
Strawberries	46.4	42.7	48.9	45.5	47.2
Other berries and grapes	96.9	109.6	130.8	137.7	113.7
Floriculture and nursery	369.1	405.5	457.7	557.1	591.3
Tobacco	150.4	451.7	263.3	211.9	297.9
Mustard seed	35.4	41.3	31.4	31.2	38.2
Sunflower seed	11.8	6.7	9.2	10.8	15.0
Lentils	—	65.9	46.4	27.6	40.2
Canary seed	—	27.9	14.9	14.1	22.7
Dry beans	29.6	23.5	45.7	19.0	39.4
Dry peas	29.7	38.4	62.0	54.5	38.7
Forage and grass seed	31.4	69.1	50.1	66.6	38.9
Hay and clover	26.8	25.8	23.6	29.7	33.4
Maple products	44.3	61.2	55.8	92.6	74.1
Forest products	73.7	81.4	82.4	83.3	86.8
Miscellaneous crops	64.8	68.8	66.4	73.4	75.2
Total crops	8,006.8	7,771.7	7,170.1	8,029.3	8,460.1

15.15 FARM CASH RECEIPTS, BY SOURCE, CANADA, 1985-89 (MILLION DOLLARS) (concluded)

Item	1985[r]	1986[r]	1987[r]	1988	1989
Cattle	3,257.3	3,212.7	3,372.1	3,520.5	3,540.6
Calves	318.8	344.4	391.8	403.5	405.5
Hogs	1,833.2	2,135.5	2,128.7	1,785.1	1,782.1
Sheep	3.1	2.4	2.3	2.6	3.0
Lambs	25.6	31.1	33.3	29.8	29.2
Dairy products	2,718.3	2,812.2	2,882.6	3,071.2	3,084.8
Hens and chickens	724.8	772.2	798.5	836.9	922.0
Turkeys	186.3	186.1	191.3	202.1	219.3
Eggs	470.6	458.6	458.6	487.6	534.9
Wool	1.5	1.4	1.6	2.3	2.1
Honey	60.0	52.5	51.6	48.4	43.4
Furs	53.2	26.9	79.6	57.5	41.2
Miscellaneous livestock	140.8	152.4	161.0	179.9	179.3
Total livestock	9,793.5	10,188.5	10,553.1	10,627.4	10,787.4
Crop insurance payments	634.9	587.1	393.4	604.3	993.2
Western Grain Stabilization Act payments	521.8	858.7	1,395.5	693.1	176.3
ASA Price Stabilization	15.8	27.4	124.6	146.2	69.5
ASA Tripartite	—	3.1	1.2	136.5	486.1
Provincial stabilization	294.7	326.8	155.1	348.1	371.5
Dairy subsidy	282.1	276.6	279.7	286.2	274.4
Other payments	140.4	374.6	1,000.0	1,147.8	902.2
Total payments	1,889.7	2,454.3	3,349.4	3,362.1	3,273.2
Total receipts	19,690.1	20,414.5	21,072.7	22,018.7	22,520.7

15.16 FARM OPERATING EXPENSES AND DEPRECIATION CHARGES, BY PROVINCE, 1985-89 (MILLION DOLLARS)

Province	1985	1986	1987	1988	1989
Newfoundland	37.0	39.1	40.6	44.4	46.6
Prince Edward Island	160.4	162.3	164.5	173.6	182.8
Nova Scotia	219.9	218.0	222.2	235.2	245.5
New Brunswick	189.7	187.8	194.1	200.0	209.2
Quebec	2,364.6	2,401.0	2,482.9	2,665.6	2,753.5
Ontario	4,400.3	4,350.1	4,339.3	4,585.8	4,782.8
Manitoba	1,735.0	1,673.7	1,652.9	1,706.9	1,813.2
Saskatchewan	3,531.6	3,514.4	3,471.9	3,451.8	3,713.5
Alberta	3,571.0	3,409.7	3,406.7	3,556.7	3,821.2
British Columbia	934.8	927.8	896.9	949.0	1,006.3
Canada	17,144.3	16,883.9	16,871.9	17,569.0	18,574.8

15.17 FEDERAL FARM ASSISTANCE PROGRAMS

Program	Highlights
Farm Improvement and Marketing Co-operatives Loans Act	— guarantees loans of up to $250,000 to farmers and $3 million to co operatives with repayment periods of up to 15 years for additional land purchase and 10 years for other purposes.
Agricultural Products Board	— may buy, sell, store, transport, process, import or export farm products.
Agricultural Stabilization Board	— stabilizes prices of agricultural products to help the industry get fair returns and maintain a fair relationship between prices received by farmers and the costs of their goods and services.
The Crop Insurance Act	— provides for federal contributions of 25% of insurance premiums and half of administration costs of provincial crop insurance programs to reduce the effects of crop losses caused by uncontrollable natural hazards.
Canadian Livestock Feed Board	— conducts research and assists in storage and transportation costs as well as freight rate negotiations related to feed grain.
Farm Credit Corporation (FCC)	— provides mortgage credit and financial services to farmers at fixed interest rates over a variety of terms or a unique shared risk mortgage protecting clients against interest rate fluctuations.
Farm Debt Review Assistance Program	— assists farmers in difficulty by providing contributions from Agriculture Canada equal to concessions made by the FCC.
Advance Payments for Crops Act	— producers receive interest-free cash advances on storable crops in return for agreements to store crops at harvest and market them over an extended season.
Agricultural Products Co-operative Marketing Act	— provides minimum average price guarantees to co-operative marketing pools to encourage co-operative marketing of agricultural products.
Crop Development Fund	— helps financial development and acceptance of new crops and varieties as well as more efficient production methods and technologies.
The Prairie Grain Advance Payments Act	— cash advances to western producers from the Canadian Wheat Board when quota delivery opportunities are restricted. Maximum loans are $500,000 with the first $50,000 interest free in the 1990-91 crop year under the Cash-Flow Enhancement Program.
The Western Grain Stabilization Program	— protects western grains and oilseeds and special crop producers by cushioning the effect of sharply reduced cash flow caused by disruptive price, market and production cost factors.

Source
Statistics Canada.

Chapter 16

ENERGY

16.1 INTRODUCTION

CANADA POSSESSES A WEALTH OF ENERGY RESOURCES, and over the past century the nation's energy supply and demand equation has shifted considerably.

In the years immediately after Confederation, the government's primary energy objective was to encourage Canadians to use domestic coal. By the turn of the century, coal from Nova Scotia, New Brunswick and Alberta had become the nation's principle fuel.

In the 1940s, oil and gas emerged as important energy sources, particularly for industry. These resources had been produced in Canada as early as the mid-1800s, but a substantial petroleum industry did not develop until after World War II.

In the 1950s and 1960s, plentiful and inexpensive oil allowed annual increases of up to 5% in Canadian energy use. This rapid growth ended abruptly with the energy crisis of 1973. As international oil prices skyrocketed, Canada's annual increase in energy use declined correspondingly; by the mid-1980s, the rate of increase had dropped to about 1%. Conservation programs were largely responsible for this decline, although slower economic growth also played a part.

As well as a substantial petroleum industry, Canada has also developed extensive electrical generating capacity. By the 1980s, hydro power provided 65% of Canada's electricity needs. Electricity from nuclear plants was also important, particularly in Ontario. By the late 1980s, it was meeting 46% of electrical needs.

In 1990, well over half of Canada's energy requirements were met through petroleum and natural gas. Another quarter was supplied by hydro- and nuclear-generated electricity.

In recent decades, these major energy sources have become associated with environmental, health and safety issues. However, alternative sources such as solar, wind and biomass energy will take decades to develop, and Canadian energy policy thus focuses on using existing sources more efficiently and on minimizing environmental impacts.

EMR/CANMET

Wind generators at Canada's most northern wind farm produce electricity at Cambridge Bay, Northwest Territories.

16.2 CANADIAN ENERGY SUPPLY AND DEMAND

Canada produces more crude oil, natural gas, coal and electricity than it uses, and is the world's leading exporter of uranium. However, these resources are not without limits, and Canada's geography, climate and industrial structure have made it one of the world's most energy-intensive countries. Oil and gas still meet the majority of Canada's energy requirements, but production of crude oil is expected to decline as known accessible fields are depleted. If this trend continues, Canada will become a net importer of crude oil in the next decade.

In 1988, Canada had an estimated 1.0% of the world's proven conventional crude oil reserves, produced 2.8% of the world's crude oil and had 2.6% of global petroleum refining capacity. Its coal reserves made up 2.4% of the global total, while production (in heat equivalents) was 1.9% and usage was 1.4%. Natural gas proven reserves were equal to 2.4% of world reserves, while production equalled 4.6%. Nuclear energy consumption was 4.5% of the world total.

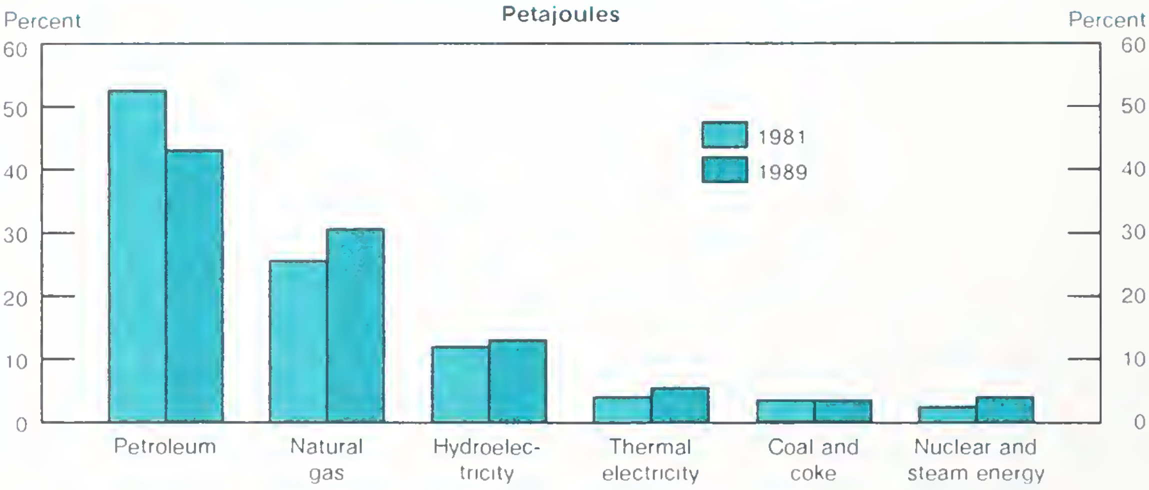
Canada uses a large pool of its own resources, but its role as exporter netted a $6.8 billion energy trade balance in 1989. Natural gas exports accounted for $3.0 billion, coal for $1.4 billion, crude oil and equivalent for $854 million, natural gas liquids for $419 million and electricity for $440 million. Other energy products accounted for the remaining $647 million.

Balancing the ups and downs of the international market with domestic demands and conservation and environmental concerns makes managing Canada's energy industry a complex task.

Canada's energy resources are centred in the Western provinces where most of the country's oil, natural gas and uranium are found. Ontario and Quebec are high producers of nuclear and hydro power respectively, but receive the balance of their energy requirements either from Western Canada or by importing.

Chart 16.1

ENERGY FINAL USE, BY HEAT CONTENT



In 1989, Canadian primary energy production was 11 350 petajoules (a unit that measures the heat content of various fuels so they can be easily compared), an increase of 1.6% from 1988, and an increase of 16.6% since 1986. Natural gas, including natural gas liquids (NGLs), accounted for 39.9% of production, crude oil for 33.2%, coal for 15.2% and hydro and nuclear energy, including nuclear steam, for 11.7%. After adjustments for exports, imports and inventory changes, the primary energy available for consumption in Canada in 1989 was 8 923 PJ, an increase of 3.2% over 1988 and of 14.1% over 1986. Of the total current primary energy consumption, 38.1% was crude oil, 33.9% natural gas and NGLs, 14.6% hydro and nuclear and 13.4% coal.

Alternative energy forms are estimated to account for more than 7% of Canada's energy requirements. The majority of this energy comes from forest and mill wood wastes, liquor from pulping, and agricultural and municipal wastes. The industrial sector uses more than 95% of this energy, mainly for the production of process steam and space heating, with a small amount being used to generate electricity.

In comparison to projects in other countries, the contribution of solar and wind energy in Canada is still very small. There is one full-scale demonstration tidal electric power station in Nova Scotia with a generating capacity of 4.6 megawatts. This tidal flood station produces enough electric power to supply more than 3,500 homes annually.

MOON POWER

Canada's Bay of Fundy, in Nova Scotia, is famous for its extraordinary tides. The tides, which follow lunar rhythms, average nearly 6.5 metres in height at the head of the bay, and that is more than enough to make electricity. To capitalize on this moon power, the ***Annapolis Tidal Generating Station*** *was built in 1984. This $64 million test site — North America's first tidal power station — has been planned to be as environmentally friendly as possible.*

The Annapolis station is unique, due largely to its special turbine, although there are other tidal power stations of greatly differing sizes operating in France, China and the Soviet Union.

There are actually few places in the world with tides high enough to generate power. Of close to 20 known sites, there are three more in the Bay of Fundy, at Cobequid Bay, Cumberland Basin and Shepody Bay. Other potential Canadian sites are at Observatory Bay near Prince Rupert, Sechelt Inlet near Vancouver, and Ungava Bay in Labrador.

The possibility of exploiting the tides in the Bay of Fundy was first studied in 1944, but judged then to be uneconomic. However, by the 1970s, with fossil fuel prices rising and increasingly strict environmental safeguards, the economic picture had changed.

In 1977, a Bay of Fundy Tidal Power Review Board report concluded a tidal power plant was economically feasible and would eliminate the need for new fossil fuel generating stations then planned by utility companies in the Maritimes. Economic conditions at the time made full scale tidal power schemes on the Bay of Fundy very attractive.

The Annapolis site, initially owned by the Tidal Power Corporation and designed and operated by Nova Scotia Power Corporation, is a testing ground for a special Swiss-designed straight-flow turbine originally developed to generate power in low-head river projects in Europe. The Annapolis turbine, manufactured in Canada, is twice the size of any of its European counterparts, and it works in salt water. Adaptations may be used to harness the Bay's tides on a larger scale.

At Annapolis, tidal water flowing at 408 cubic metres a second turns the turbine's 7.6 metre propellor at 50 revolutions per minute. The tide collects in a reservoir at high tide, then is released to run down to the sea through the turbine when the tide recedes again. Electricity from the project feeds into Nova Scotia's provincial transmission grid. Capacity of the generator is 20 MW, with an annual power production approaching 50 GWh.

Success with the Annapolis project could lead to a full-scale power development on the Bay of Fundy, giving Nova Scotia the ability to become an exporter of reliable renewable energy to the United States' lucrative eastern seaboard market. The first proposed full scale project would consist of 42 turbines with a total capacity of 1 428 MW, capable of an annual power production of 3 307 GWh.

There are both advantages and disadvantages to tidal power generation. On the positive side, tides are a readily available, inexhaustible, and predictable energy source. There are thus no fuel costs, maintenance costs are low, and the cost of tidal energy will of course remain stable. In addition, a tidal facility is clean and non-polluting.

However, tidal power developments are capital intensive. Also, more research is needed on how a tidal power development affects erosion and sediment deposits, especially in the Bay of Fundy. Assessing the ecological impact of the full-scale project is complicated and further work is needed.

Nova Scotia Power

Annapolis Tidal Generating Station.

Although alternative energy use in Canada is still in its infancy, the geothermal energy resources in parts of Canada are very large. British Columbia is the most favourable area for high-temperature water and steam for electrical generation. Parts of Alberta and southern Saskatchewan are favourable for medium-temperature water for direct use, including space heating. There are also several recreational areas in the western mountains that use water from natural hot springs.

The most easily developed form of geothermal energy is shallow groundwater that can be easily and cheaply recovered in large quantities for use in space heating projects. Two projects using groundwater as a source for heat pumps are currently in operation: one at Carleton

EMR/CANMET

One of the world's largest vertical axis wind turbines is at Cap Chat, Quebec.

ALTERNATE ENERGY RESEARCH

Canada is fortunate in its abundance of conventional energy sources above and below the ground — fast-flowing rivers for hydroelectric generation, and large deposits of coal, conventional petroleum and natural gas to fuel industry, transportation, home heating, and thermal generating stations.

However, Canadians are also at the forefront of renewable alternate energy exploration. Canada participates in international research into bio-energy, hydrogen, large-scale wind generation, peat production, small solar power, and solar heating and cooling.

In this country, 20 government departments and Crown corporations are part of an Interdepartmental Panel on Energy Research and Development. This panel was struck to look at ways of using and developing traditional and non-traditional energy sources in all areas except nuclear fission. In alternative energy, it considers renewable and environmentally compatible sources like hydraulics, active and passive solar, photovoltaics (light converted directly into electricity), bio-energy, wind, and geothermal. All of these share two important traits: they are renewable and they are not environmentally destructive.

Canada is already doing concrete work on innovative projects in this field, some through an R&D program funded by Energy, Mines and Resources. In Lethbridge, Alberta, there is a test site to evaluate a number of new wind machines that pump and produce power; in Cap-Chat, Quebec, the largest vertical-axis wind turbine electric generator in the world; at an auto plant in Oakville, Ontario, Canada's largest solar-heating system; in Scarborough, Ontario, ground-source heat pumps, which tap the earth to heat and cool a federal building; and in Medicine Hat, Alberta, low-pollution buses that run on methanol.

Canadian researchers are also at the forefront of fusion research, which may provide a cleaner form of nuclear energy than present-day fission reactors.

In addition, new sources for transportation energy are being examined. Burning hydrogen causes virtually no pollution. It can be made through electrolysis of ordinary water, carrying almost limitless, pollution-free energy, if the electricity used is generated from alternative sources. The R&D program supports development of hydrogen-based technology like electrolytic cells, fuel cells and hydrogen storage.

Forests are another source of renewable energy, if harvests are properly managed. Forestry Canada uses computer simulations to help decide how many trees may be harvested, and when.

Communities may eventually be able to generate energy from their own wastes. Recycling some waste and burning the rest, while difficult, can reduce landfill waste by up to 90% and recover energy as well. Environment Canada's work in the field is some of the most advanced in the world, and several cities now use the technology for their incinerators.

Another disposal problem, old tires, may also become a source of energy. A pilot project at Laval University uses a process called vacuum pyrolysis to "cook" tires and reduce them to fuel oil, gas, scrap steel and reusable low-grade carbon black.

And Canadians have made an unlikely substance — sewage sludge — a fuel source. Every year, this country produces some 500 000 tonnes and spends about $100 million to dispose of it. In a process developed by Environment Canada's Wastewater Technology Centre, dried sludge is heated in an oxygen-free chamber, reducing the earth's natural oil-forming process from several million years to 30 minutes. Usable furnace oil and methane and char are produced, all with energy value.

University in Ottawa, where the groundwater is derived from shallow limestone aquifers, and one at Springhill, Nova Scotia, where the water is pumped from abandoned coal mine workings. Both projects have shown significant savings over other forms of space heating and there is excellent potential for similar projects elsewhere in Canada.

A new emphasis was placed on conservation when worldwide oil prices increased in 1973 and 1979. The Canadian government decided to implement measures designed to conserve energy and reduce dependency on petroleum-produced fuels.

Various initiatives were launched to increase energy efficiency and encourage conservation. Programs were developed to have homes switch from oil to natural gas or electric heating, to better insulate older homes, and to build new homes that were more energy efficient. Consumers were encouraged to use more fuel efficient cars that produced less pollution, and to use alternative fuels such as propane and natural gas. Industry was also included in the bid to conserve Canada's resources. For example, a 20-year program was implemented to get older industrial plants to save 31% of their fuel use, with usage in 1973 as a base line. As of 1987, a 28% saving had been achieved.

16.3 OIL AND GAS

PRICING

Domestic energy prices in the last two decades have risen dramatically due to increases in the international price of crude oil. International prices first rose in 1973 when the Organization of Petroleum Exporting Countries (OPEC) was formed, and they rose again in 1979 during the Iranian crisis. World prices fluctuated in subsequent years due to a continuing imbalance between international supply and demand. In 1989, prices strengthened due to increasing world demand and reduced production levels in the North Sea and the United States.

Crude oil prices in Canada peaked in 1985 at almost $234 per cubic metre ($234/m^3). During the fourth quarter of that year and the first quarter of 1986, the collapse in world oil prices caused Canadian prices to plunge to an average of $129/m^3. Since then, crude oil prices have remained unstable due to global supply-demand imbalances. In 1987, Canadian oil prices rose to $153/m^3, then fell to $117/m^3 in 1988, rising again in 1989 to $140/m^3. These lower prices have led to a reduction in industry cash flow, and a deterioration of industry's incentive to invest in conventional exploration and development, as well as riskier non-conventional projects.

The natural gas market has not been as chaotic. The lack of a global market for natural gas shielded Canada's market from being directly affected by disruptions in areas such as the Middle East. Prices in the United States affect Canada's trade in areas where Canadian exported natural gas is in direct competition with US domestic natural gas.

John Boyd/National Archives of Canada/RD-75

Shooting an oil well, circa 1904.

PRODUCTION AND SUPPLY

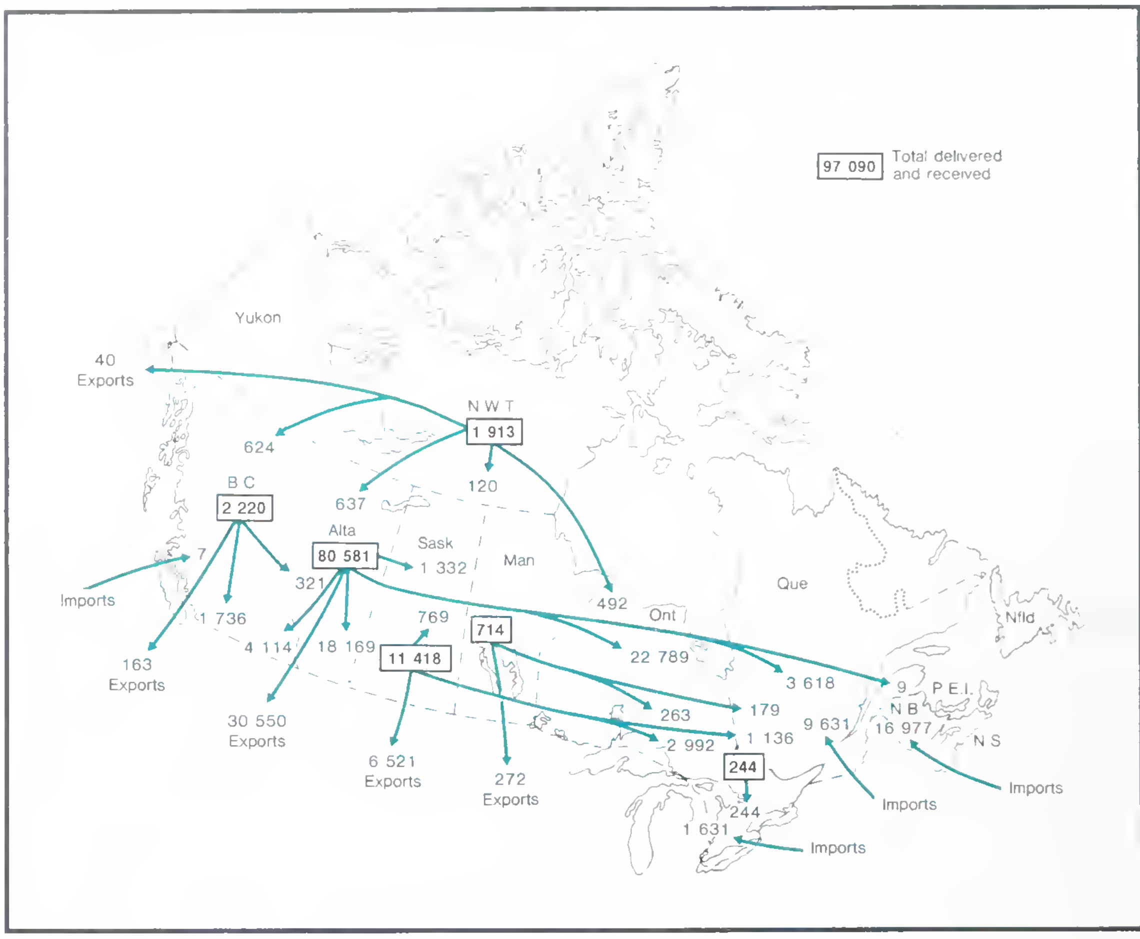
Crude oil and equivalent After six years of increasing production levels, Canada's crude oil production fell by 3.0 million m^3 in 1989, a 2.9% drop from 1988. Exports, most of which went to the mid-western United States, had also been on the rise for several years before falling by 9% in 1989 to 3.7 million m^3.

The decrease in light crude oil production, which is almost exclusively centred in Alberta, signalled a decline in the productive capacity of the older established oilfields. This was temporarily reversed in 1987 and 1988 through increased developmental drilling. There are still two full-scale oil sands plants in Alberta producing synthetic crude oil, and in 1988 and 1989 these plants have had an average production of almost 11.8 million m^3 per year. In 1989, they accounted for 12% of Canada's total crude oil and equivalent production. Synthetic crude and pentane production rose by 1.5% in 1989, partially due to completion of additions to one of the oil sands plants.

Natural gas Conversely, the production and export of natural gas increased steadily from 1987 to 1989. Although production in 1986 dropped by 4 914 million m^3 to 72 215 million m^3, it rose in subsequent years to reach 96 116 million m^3 in 1989. Exports have also risen every year since 1986, reaching 37 548 million m^3 in 1989, giving Canada a 7% share of the United States' natural gas market.

Chart 16.2

CRUDE OIL PRODUCTION AND MOVEMENTS, BY SOURCE, 1989


97 090
Total delivered and received
Yukon
40
Exports
N W T
1 913
624
120
B C
2 220
637
Alta
80 581
Sask
1 332
Man
7
Imports
321
1 736
4 114
18 169
769
11 418
714
163
Exports
30 550
Exports
6 521
Exports
272
Exports
492
Ont
Que
22 789
3 618
Nfld
9
P E I.
N B
16 977
N S
263
179
9 631
2 992
1 136
244
244
1 631
Imports
Imports
Imports

As natural gas exports have risen, the price of exported gas has declined. Over the last few years, the price has dropped from $122 per 1 000 m³ in 1986 to $80 in 1989. Many producers are now facing serious marketing problems due to natural gas deregulation (1986), the drop in the international price of crude oil, warm winter weather in most of North America, and a stronger Canadian dollar. In 1989, the National Energy Board granted 20-year licences, beginning in 1997, for the export of natural gas to the United States from the Beaufort Seas and the Mackenzie Delta, but exporting cannot begin until conditions with regard to native land claims, environmental requirements and facility construction are all met.

Natural gas production is centred in Alberta, with British Columbia and Saskatchewan also producing significant amounts. Almost 70% of the gas produced in Alberta leaves the province destined for other provinces, or for export to the United States. Ontario uses 43% of the natural gas consumed in Canada, and although it produces a small portion of the gas it uses, the majority is produced in Alberta and Saskatchewan.

OIL REFINING

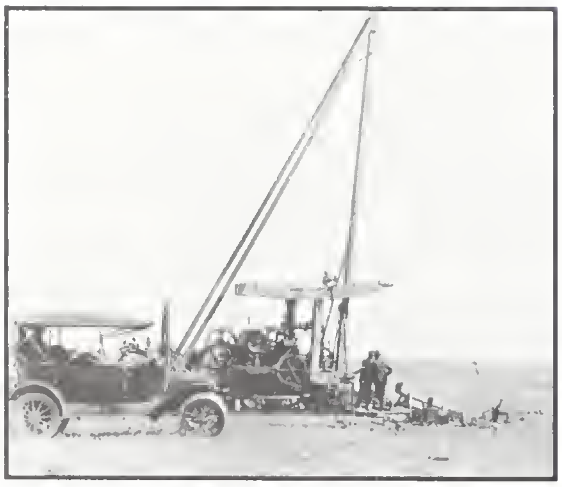
The Canadian refining industry closed 12 refineries from 1974 to 1985 due to rationalization (a process of maximizing efficiency) and declining domestic demand. In 1987, a Newfoundland refinery closed in 1976 was reopened to supply products from imported crude oil to the export market. Another previously closed refinery in the Montreal area reopened in 1988 as a petro-chemical plant, producing petro-chemical feedstock and some petroleum products from semi-processed crude oil.

NATURAL GAS

The production and use of natural gas came fairly late in Canada's history, as explained in this paragraph in the 1895 *Canada Yearbook*:

"Natural gas has been known to exist in Canada for many years, but no attempt to put it to any practical use was made until July, 1885, when a well was sunk at Port Colborne, Ontario, from which gas was utilized in the following August. Since then numerous wells have been sunk, but the two most productive gas fields thus far discovered are in Ontario . . ."

Since those days, the natural gas industry has developed considerably in Canada. Alberta has become the largest producer, yielding 79.8 billion cubic metres in 1988, while the smallest producer, New Brunswick, supplied less than 1 million cubic metres in the same year.



Minerals and Resources/National Archives of Canada/PA-17339

Number 1 well, Henderson Mine, Alberta, 1916.

CANDU NUCLEAR REACTORS

While many types of nuclear reactors are in use throughout the world, in Canada, nuclear-generated electricity is produced by the Canadian-designed-and-built CANDU nuclear power plant.

CANDU plants were developed by Atomic Energy of Canada Limited (AECL), a Crown corporation formed in 1952 to develop and market a civilian nuclear power reactor. CANDU actually stands for CANadian Deuterium Uranium; and as an acronym it captured the "can-do" spirit of the project particularly well.

The AECL's first prototype was the Nuclear Power Demonstration reactor at Rolphton, Ontario, followed by a second prototype at Douglas Point, Ontario. Both proved large-scale reactors were viable and in 1971, the first commercial CANDU reactor began operation in Pickering, Ontario.

As of April 1991, there were 20 commercial-scale nuclear stations operating in Canada — in Ontario, Quebec and New Brunswick — and they are all CANDUs.

The CANDU differs from other world reactors in that it can be refuelled without shutting down operation. In addition, its use of natural uranium, as opposed to enriched uranium, results in better fuel efficiency.

CANDUs also feature comprehensive safety systems based on an approach called "defence-in-depth": in other words, if one operating system malfunctions, a back-up system is immediately called into action.

CANDU reactors have been exported to several countries including India, South Korea, Pakistan, Argentina and Romania. In recent years, the AECL has been marketing a down-sized reactor called the CANDU 3, designed for those nations unable to afford the larger model. The key components of the CANDU 3 are identical to those of the full-sized CANDU stations.

Domestic demand for all petroleum products has increased every year since 1986, with the demand for heavy fuel oil, diesel and motor gasoline reporting the largest gains in absolute terms. Imports of heavy fuel oil to the Atlantic provinces and Quebec increased substantially because of low prices and the need for an energy source to replace hydro-produced electricity. In the Atlantic provinces, the use of heavy oil for the generation of electricity has more than doubled since 1986. In Quebec, heavy fuel oil consumption also increased as the use of electricity for process steam generation was curtailed. To help meet electricity demands, Hydro-Québec and Ontario Hydro had to reactivate heavy fuel oil power generating stations. In 1989, the new upgrader in Saskatchewan also began operation. The plant changes heavy oils into lighter, more usable components and is an integral part of the Saskatchewan co-op refinery. Some of its products are sent, through the Interprovincial Pipeline, to Eastern Canada and to the United States.

Refineries in Canada have recently been modifying their process of motor gasoline production to prepare for the end of leaded gasoline sales in Canada in 1991. The conversion to "lead free" gasoline is expected to cost refineries between $500 million and $1 billion in capital expenditures. To meet financial obligations, Texaco, of White Plains, New York, sold its Canadian operations to Esso Petroleum Canada, making Esso the largest refiner and gasoline retailer in Canada.

EXPLORATION AND DEVELOPMENT

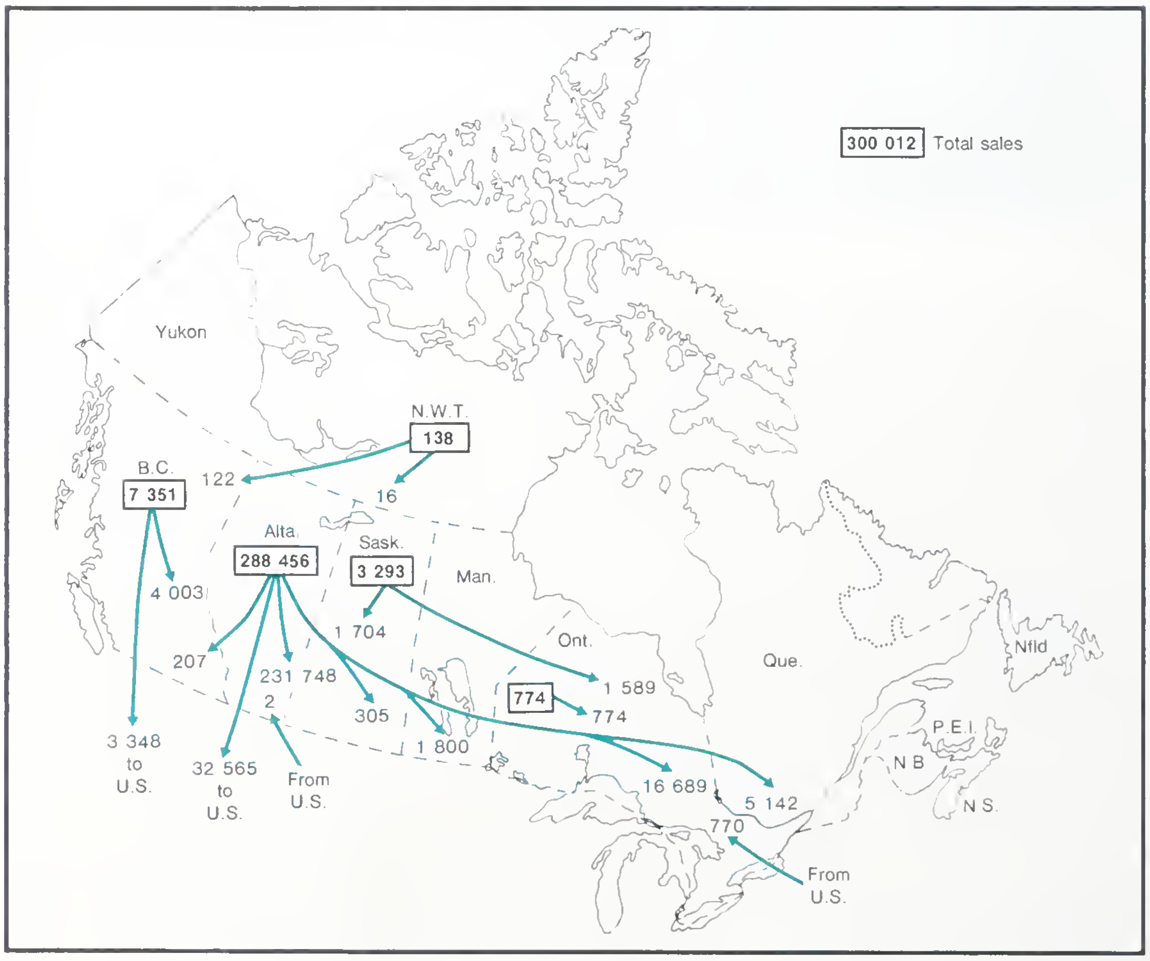
The collapse of world crude oil prices in 1985 resulted in a drastic decline in drilling activity. After a record 12,171 wells were completed in 1985, an annual average of only 6,750 wells have been drilled in the following four years. Activity slowed in 1989 due to unstable oil and gas prices, termination of government incentive programs, the impact of mergers and takeovers, and ongoing rationalization. In 1989, there was a shift from oil to gas exploration and development due to improved market opportunities for natural gas.

In recent decades, many oil wells were drilled in Canada's frontier regions such as the Arctic Islands, the Beaufort Sea and east coast offshore areas. However, with the 1985 decline in oil prices, exploration activity in these areas has been curtailed while commercial development of known fields has been slow due to the enormous costs involved. In some instances, the cost of drilling a single well in frontier areas exceeds $50 million. Current plans are focusing on the development of oil reserves at Hibernia, off the coast of Newfoundland.

Based on revenues, Canadian ownership of the crude oil and natural gas exploration and development industries (including related service industries, the so-called upstream sector) declined from 46.7% in 1986 to 43.4% in 1989. During the same period, Canadian control decreased from 49.0% to 39.0%.

Chart 16.3

NATURAL GAS PRODUCTION AND MOVEMENTS, BY SOURCE, 1989



RESERVES

Canada's crude oil and gas reserves both dropped in 1989. Conventional crude oil and pentane proven reserves stood at 1 076 million m^3 at the end of 1989, down 10 million m^3, or 0.9%, from the 1986 year-end volume. These crude reserves include fields in the North and off the East Coast of Canada. It is estimated that conventional crude oil and pentanes reserves will last 10 years at the 1989 rate of Canadian usage and export.

Alberta's Athabascan deposit is one of the world's largest known store of hydrocarbons. Canada's largest reserves are also found in the Western Canadian basin.

NUCLEAR POWER

In Canada, debate has been ongoing on the merits of nuclear power. While nuclear power supplies a clean and quality energy source, it may also pose risks to power plant workers, civilians and the environment — a core concern.

As of April 1991, there were 20 energy-generating nuclear reactors in Canada. Of these, 18 are located in Ontario — eight at Pickering Station near Toronto, eight at Bruce Station near Kincardine and two at Darlington Station near Bowmanville. Another reactor is located at Gentilly 2 Station near Trois-Rivières, Quebec; and one at Point Lepreau Station near Saint John, New Brunswick. All of the reactors are CANDU reactors, designed and built in Canada. Licences for all nuclear reactors are granted by Canada's Atomic Energy Control Board (AECB), which also sets safety standards.

Nuclear-generated electricity supplies about half the electrical energy needs of Ontario and much smaller proportions for Quebec and New Brunswick are supplied by nuclear reactors.

In Ontario, the stations housing nuclear reactors are owned and operated by Ontario Hydro. In Quebec they are owned by Hydro-Québec, and in New Brunswick by the New Brunswick Electric Power Commission. Ontario Hydro has plans to build several more nuclear reactors in the near future — causing considerable controversy.

Those against nuclear power argue that radiation produced in power generation of nuclear power could be released to the environment in a catastrophic accident. Exposure to excessive radiation can cause horrific health problems, as evidenced in the 1986 disaster in which the Chernobyl nuclear power station exploded, sending a radioactive cloud across much of the eastern Soviet Union and Europe. Despite comprehensive safety systems in place at nuclear plants, there are strong doubts that any system is entirely failsafe. Anti-nuclear activists say the very possibility of large amounts of radiation being released makes nuclear power unacceptably risky as an energy source.

Investigations in recent years by the AECB into hundreds of unusual events at nuclear stations highlight the fallibility of human beings and their technology. To date, the most serious accident at a CANDU reactor occurred in 1983 at Pickering Station when a pressure tube burst, causing a loss of coolant but no release of radiation to the environment.

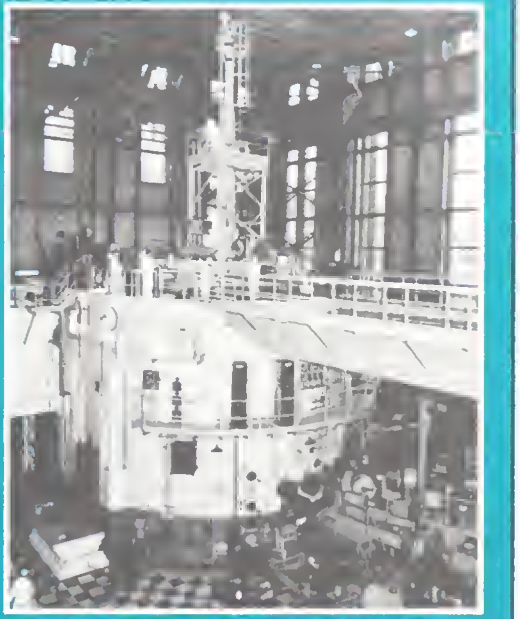
Other concerns include the safe and permanent disposal of nuclear wastes, which can stay toxic for thousands of years; and the use of nuclear power byproducts to make nuclear weapons.

Those for nuclear power argue that the operation of nuclear plants is safe and provides a relatively clean energy source. The CANDU reactors used in Canada are said to have comprehensive safety systems: each nuclear station has at least two computerized systems that shut down the reactor — the device that breaks down uranium fuel to produce energy — in case of an emergency. Safety systems and precautions should ensure that Canadians living at the boundary of a nuclear plant are exposed to radiation levels lower than the AECB limit — even in an accident where the contamination is contained.

Proponents say nuclear power is superior to coal-fired power because it does not produce sulphur dioxide which causes acid rain, or carbon dioxide which contributes to global warming. They also argue nuclear stations cause less environmental damage than hydro stations — which result in extensive flooding and usually require miles of power lines due to their remote location; in contrast, nuclear plants can be put almost anywhere and take up very little area. Further, the volume of waste produced by nuclear stations is relatively small. Spent fuel from nuclear stations can be stored safely at the reactor site and permanent storage in the stable rock of the Canadian Shield is under consideration.

Ontario Hydro

Pickering Nuclear Generating Station, 1990.



National Film Board/National Archives of Canada/PA 116482

Nuclear reactor, Chalk River, Ontario, 1955.

National Archives/PA-37798

Early alternative energy. In the first part of this century, the University of Saskatoon experimentally converted a Canadian-built McLaughlin car to run on straw gas, but the huge overhead balloon tank proved impractical for automobiles.

Natural gas established reserves were 2 732 billion m³ at the end of 1989, a decline of 13 billion m³, or 0.5%, from the 1986 level. Based on marketable production, these reserves should last 26 years at the 1989 rate of usage and exports (including shrinkage at all plants that extract ethane).

PIPELINES

In the last few years, there has been no major expansion in capacity of the main interprovincial crude oil and refined products pipelines. In 1989, capacity was not used as extensively as in 1988, reflecting the decline in Alberta's oil production.

There has been a 5.3% increase in the length of transmission pipelines for the movement of natural gas, from 64 640 kilometres in 1986 to 68 058 kilometres in 1989. Most of the increase occurred in Alberta, with lines being built to tie producing areas into the main transmission lines leaving the province. During the same period, TransCanada Pipeline built more than 1 000 kilometres of new pipeline in Saskatchewan, Manitoba and Ontario to meet the growing demand for natural gas in the Eastern Canadian domestic markets, as well as in Midwestern and Eastern United States export markets. Even with this new capacity, there was little spare capacity in any of the major interprovincial gas pipelines in 1989.

16.4 COAL

PRODUCTION AND SUPPLY

Although Canadian coal production in 1989 was virtually the same as in 1988 (70.5 million tonnes), the demand for Canadian-produced coal for domestic use and export increased by 5.1%. This additional demand was met by reducing coal inventories by 2 million tonnes. Of current production, 32.8 million tonnes, or 46.6%, was exported, mainly from British Columbia and Alberta mines, with smaller quantities being shipped from Nova Scotia. Approximately 80% of Canada's coal exports are coking coal and 20% are thermal coal. Canada is the third largest exporter of coking coal, with Japan and Korea being its major export customers.

Canada has 6 billion tonnes of proven reserves, equivalent to approximately 86 years' supply at current production rates. In addition, some 30 billion tonnes of coal contained in known deposits have not yet been fully delineated. Almost 95% of Canadian coal production takes place in surface mines in Western Canada. The remainder comes from mines in Atlantic Canada, most of which are underground.

In 1989, coal exports grew in response to the buoyant steel industry and increased demand for energy. In past years, supply has exceeded demand, but in 1989 the imbalance was partially rectified by the closure of some small, high-cost, export-oriented mines in Australia, and by strikes in Australia, the United States and, to a lesser extent, in Canada.

Mines in the United States exported 14.5 million tonnes of coal into central Canada, mostly for use in generating electricity and in steel-making. Overall, Canada was a net exporter of coal, with a trade surplus of $1,387 million in 1989.

COAL USE

Canada uses most of its coal for the generation of electricity, with 85.1% of the total domestic requirement of 54.0 million tonnes used for this purpose. Alberta obtained 78.5% of its electricity from coal, Saskatchewan 73.1%, Nova Scotia 60.7%, Ontario 24.0%, and New Brunswick 10.6%.

Due to environmental considerations, Ontario Hydro is shifting slowly to low-sulphur thermal coal from Western Canada. New technologies are being demonstrated to reduce sulphur and nitrogen oxide emissions, which contribute to acid rain. For the longer term, Canadian utilities are evaluating more efficient generating systems that produce less carbon dioxide emissions per unit of electricity. In the next few years, Ontario's coal needs should decline as new nuclear capacity comes on stream, but its dependence on coal is expected to increase again in the mid-1990s. Coal demand is also expected to grow steadily in those provinces which use coal to generate electricity.

JAMES BAY HYDROELECTRIC PROJECT

Hydroelectricity, generated by the energy of water in rivers, is Canada's largest source of electric power generation. Hydroelectricity needs large, costly dams, but is based on a renewable resource, does not require expensive fuels, and does not pollute as much as other generating methods. The largest hydroelectric project in Canada is James Bay.

Actually, James Bay, operated by Hydro-Québec, is made up of several power stations, being built in stages.

Phase I, announced by Quebec Premier Robert Bourassa in 1977, is also known as the La Grande Complex. It is located 1 450 kilometres (km) north of Montreal on the La Grande River, where the Eastmain and Caniapiscau rivers have been diverted to increase water flow.

The La Grande Complex covers 176 000 square kilometres (km^2), or about one-tenth of the entire province of Quebec, and is made up of three generating stations. "La Grande Phase I" cost $14.6 billion to build and already forms the largest hydro generation complex in Canada, producing 10 282 megawatts (MW) and sending it out over five 735 kv transmission lines.

"La Grande Phase II" includes three new stations, a new addition to a station built during Phase I, and a sixth transmission line to help handle the additional 4 410 MW of power produced. Construction costs for the projects, for which preliminary engineering began in 1988, is estimated at $7.3 billion. Total cost for La Grande Phase I is estimated at 3.1 cents per kilowatt hour, in 1991 dollars.

A projected "James Bay Phase II" includes the Grande Baleine and Nottaway–Broadback–Rupert (NBR) complexes. Grande Baleine, made up of three generating stations scheduled to be commissioned between 1998 and 2000, one 735 kv line and four reservoirs, will generate 3 000 MW. The reservoirs will have a total area of 3 143 km^2, and will be created from natural bodies of water now measuring 2 278 km^2.

Hydro-Québec expects to receive authorization to build infrastructure like roads and airports in late 1992, and to begin building the complex itself in 1993. The complex is expected to cost 4.4 cents per kilowatt hour in 1991 dollars, or $12.6 billion.

The NBR project is still in the study stage, but is expected to include eight generating stations, seven reservoirs and a 735 kv line. Hydro-Québec currently foresees building it in several stages which will be commissioned between 2001 and 2026, staggering construction to better manage environmental impacts.

The reservoirs having a total area of more than 6 000 km^2 will be created from natural bodies of water which now measure 2 500 km^2. The total cost of the project is estimated to be 4.6 cents per kilowatt hour, in 1991 dollars.

Cree Indians who fear an impact on their way of life in Northern Quebec have resorted to the courts to halt Grande Baleine. Between 1989 and 1991, the Cree have filed four court actions in which they argue that: the federal government must apply the federal environmental review process established in 1975 under the James Bay and Northern Quebec Agreement (JBNQA); and that the Quebec government's split of the project is contrary to the JBNQA. Quebec's government had decided that Hydro-Québec would assess the project under two environmental impact studies — one for the infrastructure, like roads and airports, and another for the dams and reservoirs of the project itself.

The cases were still pending at publication. However, both Quebec and Canadian governments have attempted to answer native concerns outside the courts, and agreed in early 1991 to do a joint environmental review of Grande Baleine. Separate reviews of infrastructure, to be built before the actual project, were also scheduled.

Hydro Québec

La Grande 2 spillway, James Bay, Quebec, where surplus water is discharged scores of metres into the air to partly dissipate its energy.

The second largest use of coal is for the production of coke, used in steel-making. Total coal coke consumption is expected to remain steady at about 6 million tonnes per year. In 1989, no domestic coal was used by the Canadian steel industry to produce coke. The main reason for this anomaly is geographic. Canada's major coking coal reserves are in the west, while the steel industry is concentrated in Ontario. In the next decade, new steel-making technologies that do not use coke are expected to be gradually introduced into the Canadian steel industry.

16.5 ELECTRIC POWER

ELECTRICITY GENERATION AND CONSUMPTION

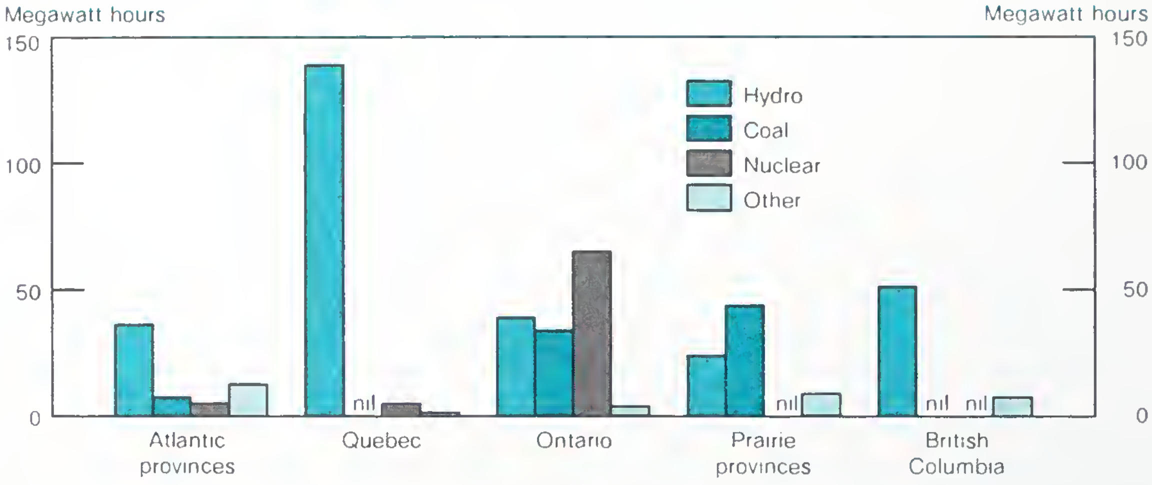
In 1989, low rainfall levels across Canada triggered a 1.4% decline in electricity generation from the previous year, dropping to 483 741 gigawatt hours (GWh). Exports of electricity in 1989 dropped to their lowest point since 1976, and in the last quarter of the year, Canada was a net importer of electricity. Exports of electricity in 1989 were 22 328 GWh, a decrease of 65.6% from 1988, and of 57.3% from 1986.

Almost every province with large hydro generating capacities saw 1989 generation levels fall below those of 1988 as a result of a general lack of rainfall during the year. Ontario was an exception; but even in Ontario, production was lower than in 1986.

The only province that did not have serious electrical supply problems was Alberta, where less than 5% of electricity needs are met by hydroelectric generation. To meet the general increase in demand for electricity, the province used 20.8% more coal in 1989 than in 1986.

Chart 16.4

ELECTRIC GENERATION, BY SOURCE AND REGION, 1989



Each of the major electricity exporting provinces experienced declines in 1989. New Brunswick's exports were down due to increased domestic and interprovincial demand. Low rainfall and snow melt meant Quebec had less electricity available for the export market. Ontario was a net importer as a result of increased domestic demand and stronger restrictions on acid gas emissions. With an easing of the water shortage, Manitoba's exports were higher than in 1988, but were still lower than they had been a few years earlier. In British Columbia, low water levels meant most of the electricity generated was required to meet domestic needs.

Ontario, Quebec, and New Brunswick are the only provinces that use nuclear energy to generate electricity. In 1989, nuclear generation accounted for 15.6% of Canada's electrical energy, 46.1% of Ontario's, 30.0% of New Brunswick's and 3.3% of Quebec's. Ontario's slight increase in hydro and conventional steam generation in 1989 was offset by a drop in nuclear generation, which was due to some units experiencing extensive down time.

LIGHTING THE WAY

Before the incandescent light bulb was invented in 1879, open flames were the major source of lighting in most Canadian homes.

For house lamps, wicks were placed in animal and vegetable oils, the most common of which was whale oil. In British Columbia, a more exotic lighting option was available: small, oily fish called smelts were attached to sticks and then ignited.

Kerosene was introduced to Canada in 1846. This inexpensive new fuel was easily extracted from coal and — later on — from petroleum, and it was widely used for lighting and cooking.

Before the turn of the century, street lamps burned oil, gas or kerosene. Lamps on vehicles used everything from candles to early carbide lamps.

C.W. Mathers/National Archives of Canada/PA-124042

Electric light station, Fort Simpson, Mackenzie River, NWT.

Energy sources of electricity generation changed only slightly in 1989, with 59.6% of the total supply coming from hydro generation, 24.8% from thermal plants and 15.6% from nuclear plants. Coal usage remained about the same as in 1988 at 46.0 million tonnes. The use of petroleum and mainly heavy fuel oils increased from 2.7 million m^3 in 1987 to 4.2 million m^3 in 1989.

A breakdown of Canadian electrical consumption in 1989 shows that 42.4% was consumed in the industrial sector, 30.0% in the residential sector, 24.7% in the government and commercial sectors and 2.9% in the transportation and agricultural sectors.

URANIUM

Canada maintained its position as the world's leading producer and exporter of uranium in 1989. Output from Canada's five primary uranium producers was estimated at 11 564 tonnes valued at $990 million. Shipments of primary uranium in 1987, the last year for which data are available, were estimated at 13 612 tonnes valued at $1,182 million, as compared with 11 502 tonnes ($1,042 million) in 1986.

After several years of declining exploration activity, exploration expenditures rose modestly in 1986 to $33 million, rising to $36 million in 1987. Exploration drilling decreased in 1986, as efforts were concentrated on established properties with proven resources. The Canada–US Free Trade Agreement, signed late in 1987, ensured access to the US market, which has the largest uncommitted uranium demand. In the near to medium term, this market is crucial to Canada's uranium producers.

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FOR FURTHER READING

Selected publications from Statistics Canada

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- *Electric Power Statistics, Volume II: Annual Statistics*, annual. 57-202
- *Electric Power Statistics, Volume I: Annual Electric Power Survey of Capability and Load*, annual. 57-204
- *Electric Power Statistics, Volume III: Inventory of Prime Mover and Electric Generating Equipment*, annual. 57-206
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- *Road Motor Vehicles, Fuel Sales*, annual. 53-218
- *Gas Utilities*, monthly. 55-002

TABLES

LEGEND

. .	*not available*	e	*estimate*
. . .	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

16.1 CANADA'S ENERGY SUMMARY[1], 1986-89

Item		1986	1987	1988	1989
Primary production	PJ	9 736	10 250	11 175	11 350
	%	−2.2	5.3	9.0	1.6
Gross availability[2]	PJ	7 845	8 070	8 586	8 947
	%	−0.1	2.9	6.4	4.2
Net domestic consumption[3]	PJ	7 210	7 383	7 830	8 090
	%	0.1	2.4	6.1	3.3
Producers' consumption	PJ	760	816	850	911
	%	4.4	7.4	4.2	7.2
Non-energy use	PJ	609	664	677	677
	%	−1.0	9.0	2.0	—
Energy use	PJ	5 867	5 918	6 309	6 499
	%	−0.1	0.9	6.6	3.0
Mining	PJ	228	232	271	274
	%	−10.6	1.8	16.8	1.1
Manufacturing	PJ	1 664	1 734	1 797	1 801
	%	2.5	4.2	3.6	0.2
Industrial	PJ	1 940	2 012	2 122	2 128
	%	0.6	3.7	5.5	0.3
Transportation	PJ	1 622	1 709	1 839	1 871
	%	−0.2	5.4	7.6	1.7
Residential and farm	PJ	1 285	1 240	1 326	1 425
	%	−0.9	−3.5	6.9	7.5
Government and commercial	PJ	1 021	957	1 022	1 076
	%	0.1	−6.3	6.8	5.3
Degree days below 18 Celsius[4]		4 221	3 965	4 088	4 348
	%	−6.6	−6.1	8.0	6.4

[1] *Measured in petajoules (PJ).*
[2] *Availability of each energy form (excluding crude oil) less production of coke, coke oven gas, thermal electricity and LPGs used in the production of refined petroleum products.*
[3] *Net production of primary and secondary sources.*
[4] *Relative temperature index for space heating purposes.*

16.2 CANADA'S PRIMARY ENERGY BALANCE[1], 1987-89 (TERAJOULES)

Year and item	Coal	Crude oil[2]	Natural gas[3]	NGLs[4]	Electricity[5]	Steam[6]
1987						
Production	1 393 936	3 690 858	3 401 980	347 243	1 392 992	23 420
Exports	738 028	1 387 291	1 059 302	129 374	170 733	—
Imports	415 312	903 931	3 527	4 157	12 429	—
Stock variation	−51 014	43 768	−3 141	20 848	—	—
Other adjustments[7]	−4 489	−8 475	9 117	14 707	—	—
Available	1 117 745	3 155 255	2 358 463	215 885	1 234 688	23 420
Transformed to other energy forms[8]	1 059 355	3 155 255	57 032	67 123		
Producers' own consumption	3 836		469 705	1 246		
Non-energy use	4 855		149 708			
Energy use — final demand	49 699		1 697 165			23 420
Industrial	45 705		781 309			23 420
Transportation			96 442			
Agricultural			18 229			
Residential	3 601		457 675			
Public administration	17		17 905			
Commercial and institutional	376		325 605			
Unaccounted for[9]	—		−15 147			
1988						
Production	1 614 196	3 877 940	3 921 667	370 965	1 377 740	12 928
Exports	875 696	1 588 898	1 360 377	160 706	122 596	—
Imports	506 463	1 002 561	14 564	5 421	22 359	—
Stock variation	44 940	−31 037	−6 418	−1 503		
Other adjustments[7]	283	16 399	10 407	—	—	—
Available	1 200 306	3 339 039	2 592 679	217 183	1 277 503	12 928
Transformed to other energy forms[8]	1 138 766	3 339 039	68 791	43 855		
Producers' own consumption	4 550		477 136	975		
Non-energy use	5 461		168 607			
Energy use — final demand	51 529		1 883 077			12 928
Industrial	48 239		857 375			12 928
Transportation			124 402			
Agricultural			20 800			
Residential	2 802		506 995			
Public administration	179		18 617			
Commercial and institutional	309		354 888			
Unaccounted for[9]			−4 932			
1989						
Production	1 718 400	3 769 303	4 152 471	377 896	1 310 173	21 471
Exports	997 790	1 445 953	1 432 301	181 602	80 379	—
Imports	420 686	1 087 781	29 160	14 845	46 689	—
Stock variation	−57 109	6 319	−28 961	−24 485		
Other adjustments[7]	−618	−3 093	11 610	—	—	—
Available	1 197 787	3 401 719	2 789 901	235 624	1 276 483	21 471
Transformed to other energy forms[8]	1 138 978	3 401 719	139 665	45 062		
Producers' own consumption	3 864		521 171	1 813		
Non-energy use	5 150		168 113			

16.2 CANADA'S PRIMARY ENERGY BALANCE[1], 1987-89 (TERAJOULES) (concluded)

Year and item	Coal	Crude oil[2]	Natural gas[3]	NGLs[4]	Electricity[5]	Steam[6]
1989 (concluded)						
Energy use — final demand	49 795		1 957 305			21 471
Industrial	47 394		869 621			21 471
Transportation			131 648			
Agricultural			21 993			
Residential	2 204		538 219			
Public administration	197		20 638			
Commercial and institutional	—		375 186			
Unaccounted for[9]			3 647			

[1] *The quantities of crude oil and natural gas shown here include an estimate of consumption of producers own production in the synthetic crude and heavy oil sectors. Data in this table may not agree with data presented in other tables due to method of computation.*

[2] *The general terms "crude oil" or "crude oil and equivalent" comprise conventional crude, condensate, pentanes, synthetic crude oil and experimental crude oil.*

[3] *Modified gross production of natural gas, that is, gross production less reinjection and shrinkage.*

[4] *Gas plant natural gas liquids, butane, propane and ethane.*

[5] *Hydro and nuclear only.*

[6] *Steam produced from nuclear sources.*

[7] *Includes interproduct transfers as well as other adjustments.*

[8] *For electricity and steam generation, coal coke production and for refined petroleum products.*

[9] *Cyclical billing accounts for much of the natural gas number reported.*

16.3 CRUDE OIL AND EQUIVALENT PRODUCTION, VALUE, SUPPLY AND DEMAND, 1988 AND 1989

Item and province or territory	Production[1] ('000 m³)		Value ($'000,000)	
	1988	1989	1988	1989
Crude oil				
Atlantic provinces[2]	—	—	—	—
Ontario	191	244	22	33
Manitoba	769	723	79	90
Saskatchewan	12 168	11 633	1,026	1,237
Alberta	57 770	54 766	6,015	6,894
British Columbia	1 887	2 016	206	269
Northwest Territories	1 833	1 884	124	178
Canada, crude oil	74 618	71 266	7,472	8,701
Pentanes[3]				
Manitoba	1	3	—	—
Saskatchewan	28	28	3	3
Alberta	6 285	6 441	700	861
British Columbia	196	238	18	25
Northwest Territories	18	28	1	3
Canada, pentanes	6 528	6 738	722	892
Synthetic crude oil[4]				
Alberta	19 188	19 375	1,696	2,161
Total				
Atlantic provinces[2]	—	—	—	—
Ontario	191	244	22	33
Manitoba	770	726	79	90
Saskatchewan	12 196	11 661	1,029	1,240
Alberta	83 243	80 582	8,411	9,916
British Columbia	2 083	2 254	224	294
Northwest Territories	1 851	1 912	125	181
Canada, total	100 334	97 379	9,890	11,754

16.3 CRUDE OIL AND EQUIVALENT PRODUCTION, VALUE, SUPPLY AND DEMAND, 1988 AND 1989 (concluded)

Item and province or territory	Supply and demand ('000 m^3)	
	1988	1989
Supply		
Production of crude oil and equivalent[5]	100 966	98 015
Imports		
Crude oil and equivalent	26 034	28 247
Products	8 925	10 248
Sub-total, imports	34 959	38 495
Interproduct transfers		
LPGs[6] received by refineries for blending	1 598	1 626
Propane and butane to natural gas liquids stream	−2 747	−2 219
Sub-total, interproduct transfers	−1 149	−593
Total, supply	134 776	135 917
Demand[7]		
Domestic demand		
Motor gasoline	34 152	34 804
Diesel fuel	16 822	17 348
Kerosene, stove oil	747	764
Light fuel oil	6 701	6 915
Heavy fuel oil	8 781	10 850
Aviation fuels	5 234	5 355
Non-energy products	7 694	7 992
Other[8]	6 336	8 402
Sub-total, domestic demand	86 467	92 430
Exports		
Crude oil and equivalent	41 259	37 548
Products	13 469	12 392
Sub-total, exports	54 728	49 940
Total, demand	141 195	142 370
Inventory changes and other adjustments	−6 419	−6 453

[1] *Marketable production.*
[2] *Includes offshore production.*
[3] *A product of gas plants.*
[4] *Includes experimental crude oil.*
[5] *Includes estimated production to cover own production used in the oil sands plants.*
[6] *LPG (liquefied petroleum gas).*
[7] *Includes producers consumption as well as an estimate of consumption of producers own production in the synthetic crude and heavy oil sectors.*
[8] *Includes still gas, petroleum coke and own consumption of refinery produced propane and butane.*

16.4 MARKETABLE NATURAL GAS PRODUCTION, VALUE, SUPPLY AND DEMAND, 1988 AND 1989

Province or territory	Production ('000 000 m³)		Value ($'000,000)	
	1988	1989	1988	1989
New Brunswick	..	..	—	—
Ontario	509	492	66	62
Saskatchewan	3 449	4 841	153	157
Alberta	77 995	79 804	6,106	4,022
British Columbia	8 820	10 844	431	366
Yukon and Northwest Territories	138	135	22	9
Total	90 911	96 116	6,778	4,616

	Supply and demand ('000 m³)	
	1988	1989
Supply		
Gross new production[1]	134 081	138 492
Reinjection and storage	13 090	15 345
Process shrinkage	14 482	14 053
Other losses and adjustments	19 795	18 044
Available natural gas	86 714	91 050
Imports	384	772
Interproduct transfers[2]	275	307
Total, supply	87 373	92 129
Demand		
Domestic demand		
Industrial[3]	22 693	23 081
Transportation	3 284	3 435
Residential and farm	13 933	14 828
Public administration	492	546
Commercial and institutional	9 369	9 931
Electrical generation	1 757	3 634
Non-energy use	4 451	4 450
Sub-total, domestic demand	55 979	59 905
Exports	35 913	37 548
Total, demand	91 892	97 453
Inventory change and other adjustments	−4 519	−5 324

[1] *Includes an estimate of consumption of producers own production in the synthetic crude and heavy oil sectors.*

[2] *Transfer of one product to another product stream which has similar characteristics.*

[3] *Includes any natural gas used to produce steam for sale.*

16.5 NATURAL GAS LIQUIDS PRODUCTION, VALUE, SUPPLY AND DEMAND, 1988 AND 1989

Item	Gas plant production ('000 m³)		Value ($'000,000)	
	1988[1]	1989	1988	1989
Propane				
Manitoba	3	6	—	—
Saskatchewan	137	51	7	2
Alberta	5 561	6 039	271	296
British Columbia	247	278	8	8
Sub-total, propane	5 948	6 374	286	306
Butane				
Manitoba	1	2	—	—
Saskatchewan	77	45	6	3
Alberta	3 340	3 207	259	199
British Columbia	149	163	8	5
Sub-total, butane	3 567	3 417	273	207
Ethane				
Saskatchewan	—	—	—	—
Alberta	6 513	6 526	313	215
Sub-total, ethane	6 513	6 526	313	215
Total				
Manitoba	4	8	—	—
Saskatchewan	214	96	13	5
Alberta	15 414	15 772	843	710
British Columbia	396	441	16	13
Yukon and Northwest Territories	—	—	—	—
Total	16 028	16 317	872	728

	Supply and demand ('000 m³)	
	1988	1989
Supply		
Gas plant production	16 208	16 317
Imports	282	616
Interproduct transfers		
LPGs[2] to refineries for blending	−1 598	−1 626
LPGs[2] received from refineries[3]	2 746	2 219
Sub-total, interproduct transfers	1 148	593
Total, supply	17 638	17 526
Demand		
Domestic energy use	3 734	3 913
Non-energy use[4]	7 633	7 534
Exports	5 992	6 877
Total, demand	17 359	18 324
Inventory change and other adjustments	279	−798

[1] *Includes propane, butane and ethane.*

[2] *LPG (liquefied petroleum gas).*

[3] *Petroleum refinery produced LPG (propane and butane) for domestic sale or export.*

[4] *Excludes any LPG which becomes part of the petrochemical feedstock in petroleum refineries.*

16.6 COAL PRODUCTION, VALUE, SUPPLY AND DEMAND, BY TYPE, 1988 AND 1989

Type and province	Production ('000 t)		Value ($'000,000)	
	1988	1989	1988	1989
Bituminous				
Nova Scotia	3 544	3 512	216	207
New Brunswick	542	520	34	34
Alberta	9 558	9 907	322	352
British Columbia	24 942	24 801	974	977
Sub-total, bituminous	38 586	38 740	1,546	1,570
Sub-bituminous				
Alberta	19 910	20 917	137	151
Lignite				
Saskatchewan	12 148	10 816	122	115
Total	70 644	70 473	1,805	1,836

	Supply and demand ('000 t)	
	1988	1989
Supply		
Production	70 644	70 473
Imports	17 477	14 522
Total, supply	88 121	84 995
Demand		
Domestic demand		
Electric generation	46 031	45 959
Coke plants	6 277	5 937
Steam generation	48	49
Industrial	1 828	1 770
Residential	141	99
Public administration	7	7
Commercial and institutional	22	—
Non-energy use	189	178
Sub-total, domestic demand	54 543	53 999
Exports	31 732	32 827
Total, demand	86 275	86 826
Inventory change and other adjustments	1 846	−1 831

16.7 ELECTRICITY GENERATED, CONSUMED[1], SUPPLY AND DEMAND, 1988 AND 1989 (THOUSAND MEGAWATT HOURS)

Province or territory	Generation		Domestic demand	
	1988	1989	1988	1989
Newfoundland	41 248	34 940	9 489	9 606
Prince Edward Island	85	104	619	650
Nova Scotia	8 890	9 171	8 117	8 482
New Brunswick	15 932	17 544	11 619	12 308
Quebec	149 762	145 557	150 046	150 156
Ontario	143 024	141 700	130 087	135 617
Manitoba	16 316	18 775	15 008	15 328
Saskatchewan	12 959	13 526	11 881	12 088
Alberta	40 321	43 449	36 339	37 687
British Columbia	61 146	57 975	49 498	50 286
Yukon and Northwest Territories	989	1 000	907	859
Total	490 672	483 741	423 610	433 067

	Supply and demand	
	1988	1989
Supply		
Production[1]		
Hydro[2]	304 530	288 567
Nuclear	78 176	75 380
Thermal	107 966	119 795
Sub-total, production	490 672	483 742
Imports	6 211	12 969
Total, supply	496 883	496 711
Demand[3]		
Domestic demand		
Manufacturing	159 264	155 150
Other industrial	28 273	28 632
Transportation	3 366	3 366
Agriculture	8 732	9 030
Residential	120 624	129 854
Public administration	12 287	13 000
Commercial and institutional	90 995	94 034
Sub-total, domestic demand	423 541	433 066
Exports	34 055	22 328
Total, demand	457 596	455 394
Own use, transmission losses and other adjustments	39 287	41 317

[1] *Net generation.*

[2] *Includes wind and tidal generation.*

[3] *Demand may not equal demand shown elsewhere due to methods of calculation and revisions.*

16.8 ELECTRIC ENERGY GENERATION BY METHOD, 1986-89 (THOUSAND MEGAWATT HOURS)

Province or territory	Year	Thermal generation					Hydro	Nuclear	Total
		Coal	Natural gas	Petroleum	Other	Total			
Newfoundland	1986	—	—	1 375	—	1 375	39 155	—	40 530
	1987	—	—	2 443	—	2 443	37 810	—	40 253
	1988	—	—	1 524	—	1 524	39 724	—	41 248
	1989	—	—	2 122	—	2 122	32 818	—	34 940
Prince Edward Island	1986	—	—	12	—	12	—	—	12
	1987	—	—	58	—	58	—	—	58
	1988	—	—	85	—	85	—	—	85
	1989	—	—	104	—	104	—	—	104
Nova Scotia	1986	5 404	—	831	135	6 370	1 040	—	7 410
	1987	5 231	—	1 589	143	6 963	788	—	7 751
	1988	5 983	—	1 634	139	7 756	1 134	—	8 890
	1989	5 566	—	2 594	41	8 201	970	—	9 171
New Brunswick	1986	945	—	2 619	244	3 808	2 815	5 597	12 220
	1987	1 384	—	3 494	403	5 281	2 240	5 112	12 633
	1988	2 005	—	5 677	293	7 975	2 616	5 341	15 932
	1989	1 864	—	7 748	274	9 886	2 390	5 268	17 544
Quebec	1986	—	—	170	2	172	144 667	4 087	148 926
	1987	—	20	181	14	215	152 686	4 660	157 561
	1988	—	25	349	—	374	144 106	5 282	149 762
	1989	—	19	1 637	—	1 656	139 081	4 820	145 557
Ontario	1986	24 397	1 473	68	91	26 029	34 266	64 972	125 267
	1987	31 617	1 587	530	207	33 941	34 786	63 116	131 843
	1988	34 333	1 738	735	147	36 953	38 519	67 552	143 024
	1989	33 940	1 460	1 566	681	37 647	38 791	65 262	141 700
Manitoba	1986	95	8	54	61	218	23 840	—	24 058
	1987	503	14	56	27	600	19 312	—	19 912
	1988	860	12	41	24	937	15 379	—	16 316
	1989	355	6	55	30	446	18 329	—	18 775
Saskatchewan	1986	7 733	240	20	140	8 133	3 767	—	11 900
	1987	8 807	280	75	109	9 271	3 189	—	12 460
	1988	10 070	401	49	96	10 616	2 343	—	12 959
	1989	9 888	621	9	169	10 687	2 839	—	13 526
Alberta	1986	28 362	4 082	160	437	33 041	1 816	—	34 857
	1987	31 317	3 672	30	483	35 502	1 450	—	36 952
	1988	34 055	4 313	32	490	38 890	1 431	—	40 321
	1989	34 087	7 134	15	615	41 851	1 598	—	43 449
British Columbia	1986	—	568	450	908	1 926	48 935	—	50 861
	1987	—	670	447	1 040	2 157	61 087	—	63 244
	1988	—	690	715	1 153	2 558	58 588	—	61 146
	1989	—	4 577	875	1 416	6 868	51 107	—	57 975
Yukon and Northwest Territories	1986	—	67	227	—	294	669	—	963
	1987	—	67	200	—	267	707	—	974
	1988	—	88	209	—	297	692	—	989
	1989	—	90	245	—	335	665	—	1 000
Canada	1986	66 936	6 438	5 986	2 018	81 378	300 970	74 656	457 004
	1987	78 859	6 310	9 103	2 426	96 698	314 055	72 888	483 641
	1988	87 306	7 267	11 050	2 342	107 965	304 532	78 175	490 672
	1989	85 700	13 907	16 970	3 226	119 803	288 588	75 350	483 741

16.9 ESTABLISHED RESERVES OF CRUDE OIL AND EQUIVALENT AND MARKETABLE NATURAL GAS, 1986-89

Province or territory	Year	Crude oil and equivalent		Pentanes plus		Marketable natural gas	
		Year-to-year '000 m³	% change	Year-to-year '000 m³	% change	Year to-year '000 000 m³	% change
Atlantic provinces[1]	1986	84 000	—			141	−9.2
	1987	83 000	−1.2			125	−12.8
	1988	133 000	37.6			98	−27.6
	1989	138 600	4.0			90	−8.9
Ontario	1986	904	−11.3			17 444	35.2
	1987	794	−13.9			17 949	2.8
	1988	1 311	39.4			18 311	2.0
	1989	1 324	1.0			17 529	−4.5
Manitoba	1986	10 522	—	33	—		
	1987	10 485	−0.4	30	−10.0		
	1988	8 838	−18.6	28	−7.1		
	1989	8 349	−5.9	26	−7.7		
Saskatchewan	1986	106 296	−15.7	240	−5.0	61 305	57.9
	1987	106 146	−0.1	572	58.0	60 705	−1.0
	1988	112 838	5.9	534	−7.1	56 283	−7.9
	1989	111 909	−0.8	498	−7.2	74 791	24.7
Alberta	1986	632 743	−2.5	115 405	−11.9	1 749 997	−4.4
	1987	631 315	−0.2	115 056	−0.3	1 727 725	−1.3
	1988	611 518	−3.2	109 343	−5.2	1 685 054	−2.5
	1989	582 531	−5.0	114 157	4.2	1 705 559	1.2
British Columbia	1986	18 500	−10.0	4 399	−1.1	240 307	−1.3
	1987	17 013	−8.7	3 891	−13.1	210 327	−14.3
	1988	17 934	5.1	3 811	−2.1	210 094	−0.1
	1989	18 490	3.0	4 260	10.5	218 393	3.8
Yukon and Northwest Territories[2]	1986	92 444	68.3	19 890	9.4	676 316	—
	1987	91 407	−1.1	18 575	−7.1	675 952	−0.1
	1988	89 704	−1.9	19 528	4.9	697 705	3.1
	1989	76 785	−16.8	18 645	−4.7	716 087	2.6
Canada	1986	945 409	3.0	139 967	−8.6	2 745 510	−1.4
	1987	940 160	−0.6	138 124	−1.3	2 692 783	−2.0
	1988	975 143	3.6	133 244	−3.7	2 667 545	—
	1989	937 988	−4.0	137 586	3.2	2 732 449	2.4

[1] *Includes the East Coast offshore.*
[2] *Includes the Arctic islands.*

Source
Statistics Canada.

Chapter 17

National Archives of Canada/C 23983

THE MINERAL INDUSTRY

17.1 INTRODUCTION

THROUGHOUT CANADA'S HISTORY, mining has been one of the chief forces for economic development.

Before Confederation, discoveries of mineral resources spurred construction of roads and trails into remote areas, and laid the economic foundation for individual communities and entire regions.

In the 1880s, as the national railway system inched towards completion, Prairie coal provided fuel for locomotives and for newly arrived settlers coping with long, harsh winters. At the same time, dreams of mineral wealth lured surveyors and geologists into Canada's vast North. These adventurers discovered extensive gold, silver, copper and zinc deposits, some of which have been in production ever since.

Since the turn of the century, Canada's mineral industry has grown to encompass a wide range of commodities, with mining occurring in every region of the country.

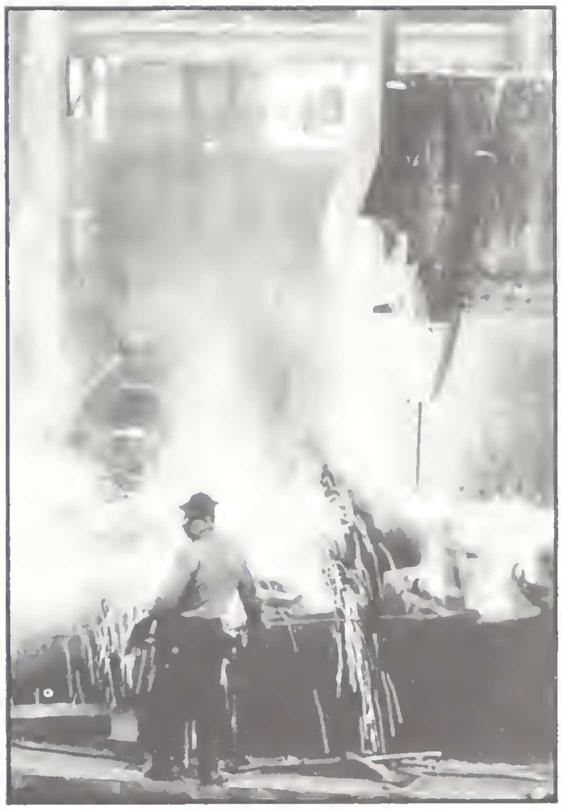
In the 1990s, the Canadian mineral industry faces tough international competition combined with unstable prices for many mining commodities. However, the industry increased its efficiency and flexibility in the 1980s, placing it in a strong position to continue contributing to Canada's economic and social well-being.

Canada is one of the world's leading producers and exporters of nonfuel minerals, producing more than 60 mineral commodities. It is the world's largest producer of uranium and zinc and the second largest producer of gypsum, potash, nickel, cobalt, titanium concentrates and asbestos. It also ranks in the top five for molybdenum, platinum-group metals, elemental sulphur, aluminum, copper, lead, cadmium, silver and gold. Except for bauxite, chromium, manganese and phosphate, Canada meets all its own domestic mineral needs. About 80% of mineral production is exported, mostly to the United States, Japan and Western Europe.

The mineral industry is generally divided into four sectors: metallic minerals; non-metallic minerals; structural materials; and mineral fuels. (The last sector is covered in Chapter 16.)

In 1990, the total value of mineral production (metallics, non-metallics, structural materials and coal) in Canada was $19.7 billion, compared to $21.4 billion in 1989. Metallic minerals accounted for $12.8 billion, non-metallic minerals for $2.4 billion, structural materials for $2.6 billion, and coal for $1.9 billion.

Ontario had 32.2% of the total value of mineral production in 1990, followed by British Columbia with 16.2%, Quebec with 15.1%, Saskatchewan with 6.2%, Manitoba with 6.2%, and Alberta with 5.6%. The remaining 18.5% was spread among the other four provinces and the two territories.


National Film Board/National Archives of Canada/C 7484

Bottom-pouring steel into ingot moulds, 1940.

CURRENT PRODUCTION

In 1990, the top 10 commodities in value of output were (in billions of dollars):

	1990	1989
Copper	2.5	2.4
Zinc	2.5	2.7
Gold	2.4	2.3
Nickel	2.0	3.0
Coal	1.9	1.9
Iron ore	1.3	1.4
Potash	0.9	1.0
Uranium	0.9	0.9
Cement	0.9	1.0
Sand and gravel	0.8	0.9

National Archives of Canada/PA-17435

Canadian jackhammer drillers sink a shaft in an Ontario mine.

Total mineral industry GDP was $22.8 billion in 1990, compared to $24.1 billion in 1989. Mining sector GDP in 1990 was $6.8 billion. GDP for primary metal industries (including non-ferrous smelters and refineries and crude steel industries) was $4.9 billion, while for semi-fabricating and fabricating industries it was $11.0 billion. Overall, the minerals sector accounted for about 4.5% of total GDP.

Total employment in the minerals sector was 387,500 in 1990, a decrease of 2.9% from 1989. Employment in mining was 74,800, in smelting and refining and in crude steel industries it was 75,500, while mineral manufacturing industries employed 237,000. Overall, the minerals sector accounted for 3.1% of total employment in Canada in 1990.

Exports of crude and fabricated minerals and of coal totalled $25.0 billion in 1990, accounting for 17.8% of Canada's exports. Just over half was destined for the US, while 13.4% went to the European Community and 13.1% to Japan.

Imports of crude and fabricated minerals were $13.7 billion in 1990. Net mineral exports (exports minus imports) contributed about $11.3 billion to Canada's balance of trade.

17.2 PROVINCIAL AND TERRITORIAL SUMMARY, 1990

Newfoundland and Labrador The estimated value of mineral production was $862 million, a 4% decrease from 1989. Iron ore accounted for $696 million of the total.

Prince Edward Island Mineral production (sand and gravel) increased to $3.3 million from $2.2 million in 1989.

Nova Scotia Mineral (including coal) production value increased 2.4% to $452 million. Industrial minerals accounted for $195 million, and coal for $199 million.

New Brunswick Mineral (including coal) production value was $886 million, a 2.5% increase over 1989. Of this total, metals contributed $596 million and non-metals $207 million.

Quebec Mineral production value reached $2.97 billion, up 4% from 1989. Metals accounted for $1.90 billion, non-metals for $530 million and structural materials for $540 million.

Ontario Mineral production value was $6.32 billion, down 13.5% from 1989. Metals contributed $4.91 billion, structural materials $1.19 billion and non-metals $220 million.

Manitoba Non-fuel mineral production value was $1.21 billion, a 23% decrease from 1989. Nickel accounted for $707 million, copper for $178 million and zinc for $142 million.

Saskatchewan Non-fuel mineral production value was $1.2 billion, a 21% decrease from 1989. This was due mainly to low prices and weak markets for uranium and potash, the two main commodities in Saskatchewan.

Alberta Coal production value was about $486 million. Total tonnage of coal produced in 1990 was 30.3 million tonnes, a decrease of 2% from 1989.

British Columbia Mineral production value was down 4.6% to $3.2 billion, with coal accounting for $1.05 billion. Coal production was 24.8 million tonnes, about the same as in 1989.

Yukon Territory Mineral production value was $541 million, up 0.2% from 1989. Zinc accounted for $328 million and lead for $127 million.

Northwest Territories Mineral production value was down 5.7% to $906 million. Zinc accounted for $611 million and gold for $217 million.

17.3 COMMODITY SUMMARY

METALS

Copper Canada ranks fourth in the world in copper production. During 1990, Canadian producers benefited from the continuing strength of international copper markets: mine shipments (recoverable copper) rose to an estimated 780 000 tonnes, compared to 704 000 tonnes in 1989. The value of these shipments in 1990 was $2.49 billion; in 1989, shipments were worth $2.39 billion. Refined production declined slightly to 504 000 tonnes from 515 216 tonnes in 1989.

Copper's properties make it and its alloys very attractive for electrical transmission, and for water tubing, castings and heat exchangers. In Canada, more than half of the refined copper consumed annually is used for electrical applications — mostly wire.

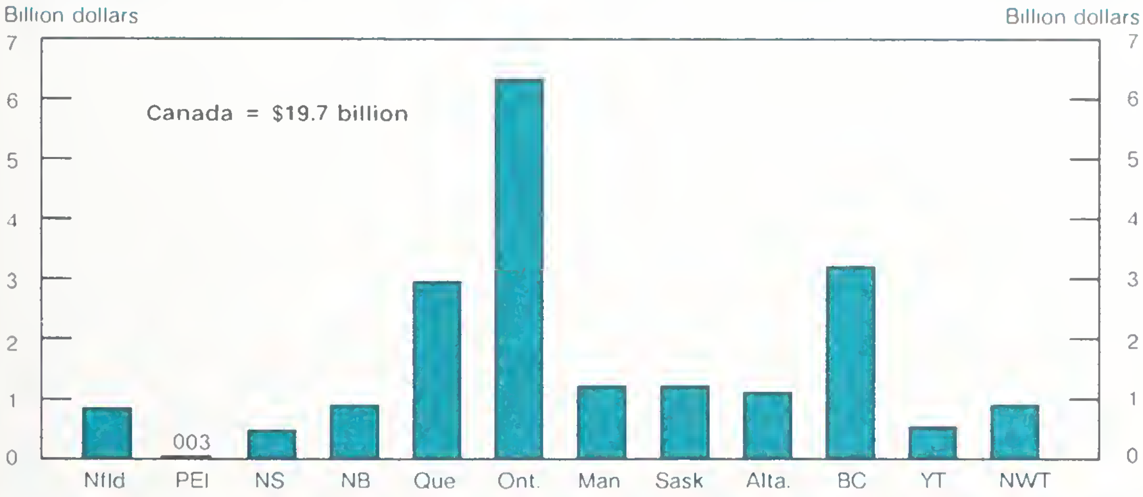
World copper consumption is forecast to grow 1.5% to 2% annually in the 1990s. However, Canadian copper production will likely decline in the early 1990s — new copper capacity will be insufficient to counter mine closures and declining capacity. By the late 1990s, though, a number of large deposits, particularly in British Columbia, are scheduled to come on-stream.

COPPER

Canada has been mining copper since its very early days. In 1890, it produced 2 700 tonnes of copper with a current value of $900,000. Today, with advanced mining technology annual production is valued in the billions. In 1990, Canada produced 780 000 tonnes with an approximate value of $2.5 billion.

Chart 17.1

VALUE OF MINERAL PRODUCTION, 1990p



Zinc Canada is the world's largest producer of zinc concentrates. Mine production in 1990 fell to 1 183 000 tonnes, a 32 000 tonne decrease from 1989, and the third consecutive year of decline. Mine closures, labour disputes and some technical difficulties continued to plague the industry. Refined metal production fell in 1990 for the second consecutive year to 579 000 tonnes, down 14% from 1989.

The average price for Special High Grade zinc was US 69¢/lb., down from US 78¢/lb. in 1989 but above annual averages from 1980 to 1988.

Zinc is used extensively for corrosion protection in the automobile and construction industries. The use of zinc for galvanizing has grown steadily in recent years: the automotive industry is the major consumer of galvanized steel.

Zinc is also used in the manufacture of brass and bronze in the die-casting industry. Zinc consumption in the western world is projected to grow at an annual average rate of 1.5% to the end of this century.

Nickel Canada is the world's second largest producer of nickel, topped only by the USSR. In 1990, Canada's nickel production increased 0.5% to about 197 000 tonnes from almost 196 000 tonnes in 1989. This was about one-quarter of world production. However, the value of Canadian nickel dropped from about $3.0 billion in 1989 to about $2.0 billion in 1990 as a result of a much lower average price — US$4.03/lb. in 1990 compared to US$6.04/lb. in 1989.

G. G. Murdock/National Archives of Canada/C-5389

Panning for gold in the Klondike.

National Archives of Canada/PA-16250

Street scene in the Klondike, 1899.

GOLD RUSHES

Canada's greatest gold rush, the Klondike, flowered and withered spectacularly in two brief years, from 1897 to 1899. As many as 35,000 men and women arrived in the far north from around the world, an astounding number given the restraints of transportation and the remoteness and hostility of the region. Dawson City, on the Yukon River, grew so quickly that famine threatened in the autumn and winter of 1897 and hundreds were evacuated, while those who stayed behind paid enormous prices in gold for a far more precious commodity — food. Yet the next summer Dawson boasted running water, electricity, steam heat and motion pictures, temporarily taking its place among the most advanced cities in the world.

Popularized by mass circulation newspapers and the writings of Jack London and Robert Service, among others, the Klondike captured the world's imagination as the last great gold rush for amateur prospectors making their mark in the frontier. Canada's popular historian, Pierre Berton, also contends that the rush provided Canadians with a view of themselves as morally distinct from Americans, with the Royal Canadian Mounted Police (RCMP) ensuring that the gold rush in the Yukon was a relatively orderly and regulated affair compared to that in Skagway, Alaska, which careened between the dual terrors of chaos and vigilantism. Whatever the psychological implications, the rush illustrated the possibilities of the north and helped establish the importance of such cities as Vancouver, Victoria and Edmonton.

The Klondike was not, however, Canada's first gold rush. Gold was discovered in the Queen Charlotte Islands in 1850, a fact which Sir James Douglas of the Hudson's Bay Company tried to keep quiet. Like other British officials, he wanted to avoid the pandemonium which had been whirling in California since the discovery of gold there in 1848. The British were especially concerned about the thousands of American prospectors and fortune-seekers who would certainly flood the barely populated region and who might possibly build their own governments and apply for statehood.

Attempts to suppress the news, however, were futile, especially when other findings followed. By 1858, when Douglas was the first governor of the newly created colony of British Columbia, 10,000 men, many of them Americans, were panning for gold in the Fraser River, with the biggest discoveries, in the Cariboo region, still to come. The Cariboo Gold Rush of 1860-66 was an important factor in the pressures leading to Confederation, and it most certainly helped inspire Canadian dreams of an intercontinental railway. But as with the California Rush, the thousands who endured the hardships of the Cariboo Mountains were tantalized by the prospect of free gold, settled as flakes or nuggets in placer deposits which could be panned or sluiced or merely picked up by an individual working alone at a time when both frontiers and the individualism associated with them were rapidly disappearing.

By the time of the Red Lake gold rush in northwestern Ontario in 1926, the wealthiest of adventurers could arrive at the goldfields by plane, and the greatest fortunes could be made trading company stocks in Toronto. But thousands still walked over land and snow from the nearest rail stop, Hudson, 64 km away along trappers' trails, to try their luck. For the amateur prospectors the rush was to last only a year, their enthusiasm waning with the dwindling of the easy finds and the approach of a new winter. From then on gold mining was to be a matter for companies, capital and technology, and new discoveries would bring jobs, wages and union struggles — a far cry from the stampedes and frontier individualism that marked the romantic age of the gold rush.

Nickel's resistance to corrosion and its other properties give it a wide range of applications. More than 60% is used in stainless steel production. Nickel is also a component in some 3,000 alloys.

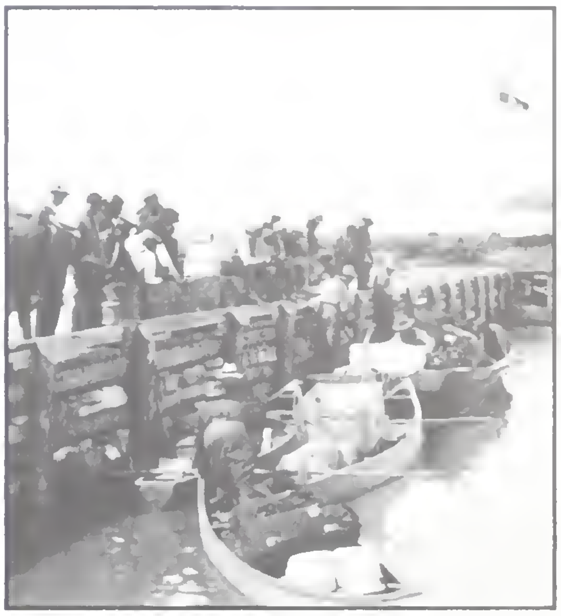
Canadian nickel production will likely increase marginally during the next several years. Canada will remain a highly cost-competitive producer, largely because of the industry's cost-reduction programs of the 1980s.

Lead Canada is the world's third largest producer of lead. In 1990, Canadian mine production of lead declined 17% to 224 000 tonnes, from 269 000 tonnes in 1989. Refined metal output fell to 195 000 tonnes from 242 845 tonnes. These declines were the result of labour disputes, production difficulties and temporary mine suspensions. Lead prices rose substantially in 1990, averaging US 37¢/lb. In 1989, the average price was US 31¢/lb.

Lead acid battery manufacturing accounts for over 60% of the market for lead. In the U.S. battery manufacturing accounts for almost 80% of total lead demand.

Until the mid-1970s, lead additives for gasoline were one of the most important markets for the metal. However, with stricter environmental regulations, the demand for lead has declined dramatically. Lead was eliminated as an additive in Canadian gasoline at the end of 1990.

In the medium to long term, world lead capacity will likely increase annually by more than 400 000 tonnes as expansions are completed and as new smelters come on-stream. With world demand expected to grow about 1.5% throughout the 1990s, this could result in a serious oversupply. Environmental and health concerns are also expected to affect lead supply and demand in the future.

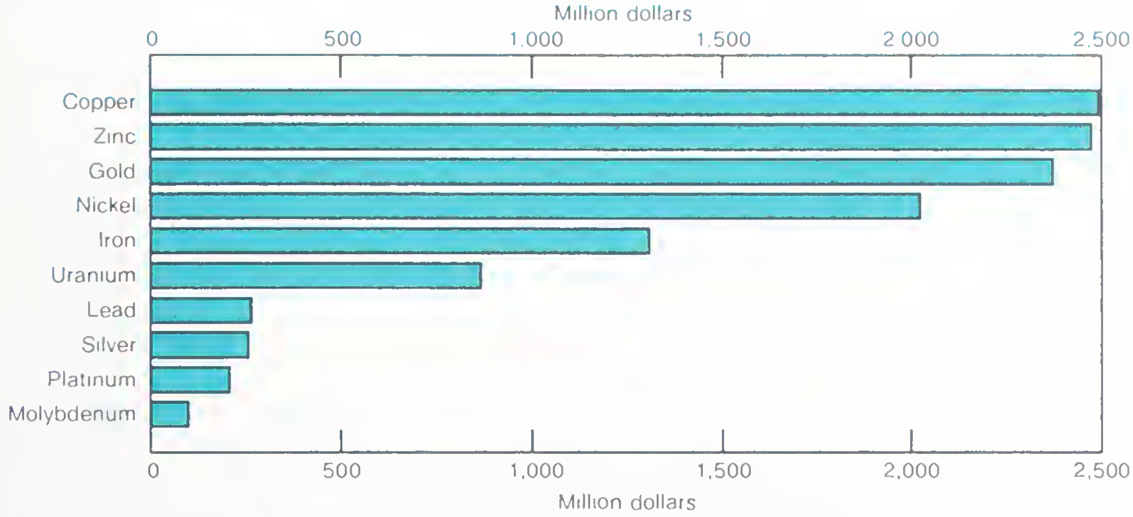


Indian and Northern Affairs/National Archives of Canada/PA 102520

Preparing to head out to lead-zinc mines from Fort Resolution, 1928.

Chart 17.2

VALUE OF PRODUCTION, LEADING METALS, 1990p



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R.E.LEMON.
GENERAL MERCHANDISE

National Archives of Canada/PA 53572

Rogers Pass Village, BC, 1886.

Gold Canada ranks fifth in world production of gold. In 1990, about 80% of the 165 tonnes of gold produced in Canada came from 60 primary gold mines; the rest was recovered from mines primarily producing other metals. Production in 1989 was 158.3 tonnes.

In 1990, the value of Canadian gold mine production, based on average prices, increased 2.7% from 1989 to $2.38 billion. In 1990, the average price of gold was US $384/oz; it was US $381/oz in 1989, and US $437/oz in 1988. Canadian gold production will likely continue to grow in the 1990s as mines expand and new mines come on-stream.

Gold is used chiefly in jewellery, electronics, dentistry and commemorative and official coins.

The largest use of gold in Canada is for the Gold Maple Leaf bullion coin family produced by the Royal Canadian Mint. The manufacture of these coins has required some 410 tonnes of gold, or 41.5% of total Canadian production, since they were introduced in 1979.

Silver Canada is the world's fifth largest producer of silver. In 1990, silver production rose to 1 400 tonnes from 1 312 tonnes in 1989. Despite this increase, the value of production declined to $256 million from $275 million in 1989. World silver prices declined in 1990 due to weak demand and increased byproduct production (worldwide, over 60% of silver is produced as a byproduct or coproduct of base metal and gold mining). In 1990, the London silver price dropped to an average of US $4.83/oz, down from US $5.50/oz in 1989 and US $6.51/oz in 1988.

The major industrial uses for silver are in photographic materials, electrical and electronic products, sterling and electroplated ware, jewellery, and brazing alloys and solders. The use of silver in coinage has been one of the fastest-growing markets for the metal in recent years.

Silver production is expected to decline substantially over the next few years as depleted mines close in British Columbia. However, production will likely recover over the longer term as new base metal mines come on-stream, thereby increasing byproduct silver production.

Iron Ore In 1990, Canada ranked seventh in world production of iron ore, although Canadian iron-ore shipments dropped 10% to 36.4 million tonnes. This was largely because two iron-ore mines closed permanently in March, reducing the number of operating mines to four, while a new mining plan severely affected production at Canada's largest mine. The value of shipments fell 4% from 1989, despite increased iron-ore prices.

Canadian iron-ore exports accounted for about 6% of the world total, making Canada the fifth largest exporter. Although Canada's largest single customer is the United States, western European countries together account for 54% of Canadian exports.

Over the long term, iron-ore exports are expected to grow about 1% annually. However, demand for iron ore may begin to decline as high quality ferrous scrap, as a substitute for primary iron, is used increasingly for steel production.

Platinum Metals Canada ranks third in world production of platinum-group metals (PGMs). This group comprises six closely related metals: platinum, palladium, rhodium, ruthenium, iridium and osmium. Among the scarcest of all metallic elements, the PGMs commonly occur together in nature.

In 1990, Canadian production of PGMs increased to 11 209 kg from 9 870 kg in 1989. The average price of platinum declined from US $510/oz in 1989 to US $471/oz in 1990.

PGMs have many applications in pure form, and as alloys of various PGMs or a PGM and other metals. The largest use of PGMs is in the production of automobile catalytic converters. Jewellery is the second largest use.

Tin All Canadian tin production comes from the 9 000-tonne-per-day open pit mine of Rio Algom Limited near East Kemptville, Nova Scotia. Rio Algom exports tin concentrates to England for further processing: Canada imports its refined tin requirements, which were 3 600 tonnes in 1989. Most of this was used by the large steel-makers, Stelco Inc. and Dofasco Inc., for making tin plate, which is used primarily for tin cans. Secondary lead refiners use small amounts of refined tin for producing lead-tin alloys and solders.

Cobalt Canadian cobalt production in 1990 was 2 291 tonnes worth $52.5 million, compared with 2 344 tonnes worth $45.8 million in 1989. Inco Limited and Falconbridge Limited both produce cobalt as a byproduct of their nickel-copper operations. Sherritt Gordon Ltd. produces cobalt from toll-refining and from purchased materials.

Magnesium Canada's magnesium output in 1990 reached 26 726 tonnes. Magnesium is chiefly used as an alloying agent with aluminum. Canadian consumption in 1989 was 15 407 tonnes, a 9.5% increase from 14 066 tonnes in 1988. Consumption will likely continue to increase as several Canadian aluminum plants expand capacity.

All three Canadian magnesium producers were expected to reach full capacity in 1991. Total annual production at that level would be 60 000 tonnes, making Canada the second largest producer of magnesium, after the United States.

Columbium Columbium is produced at the Niobec Mine at St. Honoré, Quebec. Most of the world's columbium is used in steel-making. In 1990, the market remained strong despite a drop in steel production, with Japanese demand compensating for weak European demand. The Japanese steel industry has been gradually switching from vanadium and titanium to columbium.

Tantalum Canada is the second largest primary tantalum producer in the world. Canada's sole producer of tantalum, the Bernic Lake, Manitoba mine of Tantalum Mining Corporation of Canada Limited (TANCO) operated at capacity in 1990.

About one-half of all tantalum produced is used in capacitors for computers, telecommunications and electronics. Other important uses include tantalum carbides, chemical equipment and super alloys.

Cadmium Canada is the world's fourth largest producer of refined cadmium; in 1990, Canada produced 1 643 000 kg valued at $14.4 million, compared with 1 711 000 kg valued at $28 million in 1989. Cadmium metal is recovered principally as a byproduct of zinc smelting and refining, and the 3.9% production decline was the result of strikes at two zinc mines. Because Canada is the world's largest producer of zinc, its position as a major source of cadmium seems assured.

Demand is expected to grow in the nickel-cadmium battery market, which accounts for about 50% of cadmium use. Other markets will probably remain flat or decrease; because of its toxicity, many users are searching for unregulated substitutes for cadmium.

17.4 NON-METALLICS

Asbestos Canada ranks second in world production of asbestos. Estimated total shipments for 1990 were 665 300 tonnes, valued at $256.1 million, compared to 701 227 tonnes valued at $267.3 million in 1989. Canadian asbestos mines operated close to capacity in 1990. Average prices increased by 1%.

In the 1990s, demand for asbestos/cement building products (roofing tiles, siding and sheets, and asbestos/cement pipe) is expected to remain strong in response to worldwide housing needs.

Potasb (K_2O) Canada is the world's second largest producer of potash, and the leading exporter. In 1989 and 1990, Canadian mine production was about 7.0 million tonnes. Saskatchewan produced about 86% of Canadian potash in 1990; the remainder came from New Brunswick.

The global oversupply of potash persisted in 1990. Canadian mines operated at 59% of capacity, the lowest level in the past decade. About 95% of the potash produced worldwide is used for fertilizers.

Salt In 1990, Canadian production of salt was 11.1 million tonnes, a 1% increase from 1989. Salt production in Ontario declined due to a six-month strike. Salt shipments remained fairly stable at 11.1 million tonnes, but only about one-half came from Ontario, compared to two-thirds in 1989.

Salt production capacity in Canada remained stable at 12.6 million tonnes, with rock salt accounting for 68%, followed by captive brines (24%) and evaporated salt (8%).

Salt's chief use is in manufacturing chemicals. Other important uses include snow and ice control, water conditioning, food processing and other industrial applications. In North America, the chemical industry consumes about half of total salt production.

Sulphur Canada ranks third in world production of elemental sulphur. In 1990, Canadian production increased 0.9% to 5.8 million tonnes. Shipments rose by 14%, mostly because of higher exports to the United States and Morocco.

In 1990, Canada accounted for 14.8% of world sulphur production, and Canadian exports constituted 38.4% of the world total. Output from natural gas processing accounted for 88% of total production, with the remainder coming from oil sands plants and oil refineries.

About 60% of the sulphur consumed in the world is used to produce fertilizers. The second largest user is the chemical industry, in products ranging from pharmaceuticals to synthetic fibres in plastics.

STRUCTURAL MATERIALS

In 1990, construction in Canada dropped sharply in the residential sector and slowed in the non-residential building and engineering sectors. Housing starts, a broad indicator of demand for most primary construction materials, were 222,562 in 1988, 215,382 in 1989 and about 182,000 in 1990. Total construction expenditures in 1990 were about 15% lower than the $106 billion forecast in 1989.

Mineral Aggregates Demand for mineral aggregates generally reflects trends in domestic construction. Over the past four years, Canada's annual production of aggregates, including crushed stone and sand and gravel, has been over 350 million tonnes.

CANADIAN COAL PRODUCTION

Canadian coal production has fluctuated significantly in the last 50 years. Between 1936 and 1946 total production remained relatively stable at 15-18 million tonnes, and peaked at over 19 million tonnes in 1950. Canada's subsequent conversion to oil and gas, however, drove coal production down to 12 million tonnes by 1958, at the time the lowest level since 1912. By 1969 the total had fallen even further to 10.7 million tonnes.

In the early 1970s, however, the industry was revived by the dramatic increase in Japanese demand for coking coal to fuel its expanding steel industry. By 1975 total coal production had leaped to 27 million tonnes. The energy crisis of the middle 1970s increased dependence on coal-fired generating stations, and as demand for energy has steadily risen since then, so too has coal production, to 43 million tonnes in 1982 and over 60 million tonnes in 1987.

Western Development Museum/National Archives of Canada/PA 38662

Coal mining at the turn of the century.

Cement In 1990, total Canadian cement shipments were 11.3 million tonnes valued at nearly $865 million, a decrease of more than 10% from 1989 levels. Annual production capacity remained constant at about 14.5 million tonnes.

Gypsum Shipments of crude gypsum were 8.2 million tonnes, up slightly from 1989. The value of shipments was $80.9 million. Demand for gypsum by manufacturers of wallboard products in the United States and Canada was about the same as in 1989.

17.5 MANUFACTURED METALS

Aluminum Canadian production of primary aluminum in 1990 was 1 567 000 tonnes, compared to 1 555 000 tonnes in 1989. At the end of 1990, Canadian primary aluminum smelters were operating at or above their capacity of 1 635 000 tonnes. In the first nine months of 1990, aluminum exports were 944 400 tonnes, compared to 874 600 tonnes for the same period in 1989.

Alloyed and unalloyed aluminum is used in a wide range of consumer and capital goods. The most important uses are for transportation equipment (27%), building and construction (20%), packaging (20%), electrical (9%), consumer durables (7%), and machinery and equipment (7%).

When two new smelters and two expansion projects in Quebec are completed by early 1993, Canadian primary aluminum smelting capacity will increase to over 2 261 000 tonnes. With significant growth expected in packaging and transportation equipment, aluminum consumption is expected to grow at an annual rate of at least 2% in the 1990s.

Iron and Steel Primary iron is the raw material for making steel and iron castings. Primary iron includes blast furnace iron, direct reduced iron (made by reducing iron ore with a mixture of gases) and, in Canada, electric smelted iron. Recycled ferrous scrap is becoming increasingly important for steel production. Because almost all primary iron is used to produce steel, trends in steel production and the demand for steel mill products influence primary iron production.

In the first eight months of 1990, production of blast furnace iron decreased about 18% to 5.67 million tonnes, compared to 6.99 million tonnes for the same period in 1989. This was due to a 16% decline in raw steel production, partly because of an extended strike at both Stelco Inc. and the Algoma Steel Corporation Ltd.

Over the next five to ten years, Canadian primary iron and steel production should increase, due to greater trade with the US under the Free Trade Agreement. The US imports over 25% of its steel requirements, and Canadian steel producers are well placed to capture some of this market from overseas suppliers. Increased exports of steel-intensive manufactured products could also increase steel demand.

17.6 GOVERNMENT AND THE INDUSTRY

FISCAL INCENTIVES

Although mineral industry enterprises are subject to federal income tax, the Income Tax Act offers incentives to exploration and development.

Some provincial governments also offer incentives; for example, Quebec allows extra tax allowances for exploration financed by flow-through shares, and Ontario offers cash grants to approved exploration programs.

TECHNICAL SERVICES

The provinces own all natural resources within their borders and thus control the exploration, development, conservation and primary production of minerals. Canada's provinces support mining by supplying geoscientific data, mainly in the form of maps and reports, and also issue prospecting permits, record mining claims and inspect mines.

THE GEOLOGICAL SURVEY OF CANADA

Created in 1842, the ***Geological Survey of Canada*** *(GSC) has been the driving force behind the geological mapping of Canada's nearly 10 million square kilometres of land and freshwater lakes, and more than 6 million square kilometres of continental margin, or coastal boundaries.*

The GSC is one of Canada's oldest scientific agencies and among the world's first national geological surveys. Such surveys were still uncommon when it began, although France and Britain had established theirs in the 1830s.

The GSC began life under the direction of William Edmond Logan, a charismatic Canadian businessman-turned-geologist. Under Logan's direction, the first survey the GSC carried out was of Quebec, in an effort to find coal, the main fuel of industry at the time. Although the search for coal was unsuccessful, the GSC survey ***did*** *determine there were mineable deposits of copper and other metallic minerals, setting the scene for much of Canada's 20th century hard-rock mining industry.*

In its early years, the GSC covered more than just geology. Staff members also studied and documented geography, topography, plants, animals, birds, archaeology and peoples. Members of the GSC have often been among the last to witness untouched lands before development started, and their reports and photos form a cornerstone of Canadian archival material.

Indeed, under Logan's stewardship, the GSC promoted Canadian resources and geology abroad, forming links with American and British surveys and participating in international exhibits. As a result, Logan was inducted into the Royal Society of London after an exposition in that city in 1851 and was awarded the Cross of the Legion of Honour in Paris, where he earned praise for Canada worldwide during the 1855 Universal Exposition. Queen Victoria recognized his work by knighting him in 1856.

Other directors also had a great impact on the GSC. In the 1880s, George Mercer Dawson became a pioneer geologist and noted ethnologist in Western Canada. His reports included observations on the Haida Indians of British Columbia, and his photographs of people, settlements and totem poles give a last glimpse of a vanishing landscape. In the late 19th century, under the direction of Albert Peter Low, GSC field trips were epic adventures, some lasting more than a year at a time using canoes, ships, snowshoes and dog-teams.

With time, the GSC has become more specialized. In 1927, the National Museums of Canada broke off from the Survey, and many of the Survey's early topographic mapping and policy duties have been transferred to other sections of Energy, Mines and Resources Canada, which itself grew from the Department of Mines, an offshoot of the Survey.

In 1992, as the GSC marks its 150th anniversary, it remains true to innovative roots and to a well-deserved international reputation. It continues to provide Canadians with superior technology and geoscientific knowledge about Canada and its offshore, its mineral and energy resources, and the natural conditions that affect land and seabed use. Indeed, there are still places in Canada known only through reconnaissance maps drawn from helicopter-supported surveys. These areas will provide the GSC with new frontiers and challenges that may take it well into the 21st century.

Geological Survey of Canada/77280

Sir William Logan, founder and first Director of the Geological Survey of Canada.

Geological Survey of Canada/77801

Members of the Geological Survey of Canada on an early mapping mission.

The federal government complements many of these services. Federal-provincial mineral development agreements are a typical vehicle for such co-operation.

Federally, Energy, Mines and Resources Canada (EMRC) is responsible for mineral resources off Canada's coasts, in the Hudson Bay and Hudson Strait regions, and for federally owned mineral rights in the provinces. The Department of Indian and Northern Affairs (INA) is responsible for mineral rights in the Yukon and Northwest Territories, and in Canada's Arctic offshore regions. Generally, INA is responsible for mineral resources and rights on and beneath Indian reserves. These minerals can be extracted by tender or negotiated agreement with the approval of the resident Indian band.

17.7 ENERGY, MINES AND RESOURCES CANADA

EMRC is responsible for federal mineral and energy policies and for managing technical surveys and research on mineral and energy resources. The Mineral Policy Sector develops specific policies, strategies and incentive programs that foster development of minerals and metals. The Sector works in close co-operation with the provinces, territories, industry and labour.

EMRC's surveys and research are conducted in three sectors: the Mineral and Energy Technology Sector, the Surveys, Mapping and Remote Sensing Sector, and the Geological Survey of Canada Sector.

MINERAL AND ENERGY TECHNOLOGY SECTOR

This Sector conducts research and development in mining, minerals, metals, fuel technologies and explosives. The work is conducted both in-house and by contract through the Canada Centre for Mineral and Energy Technology (CANMET). CANMET provides scientific and technological support to the Canadian mineral and energy industries through research and development (R&D) in industrial technology, health and safety, and environmental protection.

The Centre's mining R&D program focuses on mine design, mine automation and the environmental safety of mine workers. It includes research on rock mechanics, mining methods, and equipment safety, as well as on explosives testing, mining environments, equipment certification, fire and explosive hazards, tailings control, and uranium and coal reserves assessment.

CANMET investigates the properties and applications of metallic and non-metallic materials and develops new processing and fabricating techniques that increase productivity, decrease pollution and energy consumption, or introduce new industrial materials such as metal and ceramic composites.

The Centre's pilot scale facilities and special research instruments are available to companies on a cost-recovery basis.

SURVEYS, MAPPING AND REMOTE SENSING SECTOR

The Canada Centre for Remote Sensing (CCRS) processes data collected from satellites and aircraft. These data are useful in the development of minerals and other natural resources.

GEOLOGICAL SURVEY OF CANADA

To assure a supply of metals and mineral commodities, Canada's mining industry must continue to discover mineral deposits. About $1.5 billion is spent annually on exploration for minerals (excluding oil and gas). These expenditures help support the economies of many communities and regions.

In the past, Canadian exploration tended to focus on gold deposits. In recent years, however, Canadian reserves of base metals (copper, zinc, lead and nickel) have begun to decline, and emphasis has shifted to these resources.

The Geological Survey of Canada (GSC), founded in 1842, maps mineral deposits and other geological features. The GSC helps meet the needs of exploration and mining companies by producing geological maps and related information, and by developing new mining methods and equipment.

As well as providing the foundation for mineral exploration, GSC programs also support government economic, land-use and policy objectives. For example, GSC mineral resource assessments help determine the boundaries of new national parks.

Recent GSC Projects A recent Exploration Science and Technology (EXTECH) program near Snow Lake, Manitoba, will provide better models for the formation of base metal deposits. It will also improve geochemical surveying and statistical treatment methods, and techniques for integrating and plotting sets of regional data. The GSC has traditionally been a leader in these fields.

Several GSC projects focus on how mineral deposits were formed. GSC geologists do field studies of these deposits, often in collaboration with industry geologists. These studies determine geological settings and host rocks and minerals, and the findings are compared with those for other large deposits in Canada and elsewhere in the world. Laboratory studies complement this field work.

THE PRICE OF GOLD

Gold, long the universal medium of exchange, was worth $20.67 per ounce by the time of Canada's greatest gold rush, the Klondike Rush of 1897. This was the value used for the gold standard widely adopted by the early part of the century. Under the gold standard, a country's currency was measured against the stable value of gold coins.

The price of gold began to rise in 1931 when Britain went off the gold standard, until the United States fixed the price at $35 per ounce in 1934. Canadian gold producers doubled their output between 1930 and 1941 to take advantage of the high price, although production fell again during World War II.

By the late 1960s, a crisis had developed in gold production since the costs of mining had risen steeply while the value remained at $35 per ounce. When the United States abandoned the gold standard in the 1970s the price skyrocketed, peaking in January 1980 at $994 per ounce. Massive gold deposits were discovered in the next year at Hemlo in Northern Ontario, triggering a new boom in exploration.

Canada's gold production increased during the 1980s by more than five times to 165 t in 1990, at $384 per ounce. In 1990, Canada was the fifth largest gold producer, following South Africa, the United States, the Soviet Union and Australia.

Recent field and laboratory studies of mineral deposits now forming on the seafloor are greatly improving knowledge of how such volcanic-associated deposits of zinc, copper, lead, silver, gold and barium are formed. These deposits occur along spreading ridges where large oceanic "plates" are separating and new oceanic crust is being formed.

In 1990, a joint US–Canada project used the US submersible *Alvin* to sample waters from sediments around hot-water vents, where metals settle out with sulphur. In 1991, metal deposits along the Juan de Fuca Ridge were drilled as part of the International Ocean Drilling Program. When these deposits have been analyzed, the results will aid land-based exploration of similar deposits.

A GSC study of geological structures within and near a mine at Bathurst, New Brunswick, helped discover important additional ore reserves. A GSC *Lithoprobe* seismic study of the Earth's crust near Noranda, Quebec, and Kirkland Lake, Ontario, helped define deep faults in a belt of old (Archean) volcanic rocks within the Canadian Shield. Major gold deposits are associated with these faults.

A GSC mapping project in British Columbia has determined that rock units associated with the rich, recently discovered Eskay Creek gold deposit extend at least 50 km north and south of the deposit. This crucial information will guide future exploration in the area.

Other GSC studies are funded by federal-provincial Mineral Development Agreements. Some of these studies are contracted to private firms or individuals, with GSC scientists involved in planning and supervising.

In one of these studies, a mine at Sturgeon Lake in western Ontario was analyzed by mapping volcanic textures and rock structures, and by handling three-dimensional data with a computer. This analysis determined that sufficient ore was available to support operations for an additional two years.

17.8 ENVIRONMENT

In the 1990s, environmental concerns will continue to be a key issue for the minerals industry. In December 1990, the federal government released the Green Plan, which earmarks $3 billion over six years for over 100 environmental initiatives. Mineral industry associations sponsored seminars on environmental topics and worked with the government on issues raised by the Green Plan. In addition, the Mining Association of Canada acted on its 1989 Environmental Policy by adopting detailed guidelines for environmentally responsible practices.

Several Green Plan initiatives have implications for the mineral industry. By 1994, companies will be required to report regularly on how emissions from metal mines and smelters are being controlled. Regulations will be developed for transboundary movements of hazardous wastes, ensuring that these wastes are disposed of in accordance with the Basel Convention. Emissions of sulphur dioxide and greenhouse gases, including carbon dioxide, will be limited by the year 2000. The national accounts reporting system will be extended to include environmental indicators. Lastly, the national parks system will be completed by the year 2000, and the establishment of new parks could affect mineral exploration.

Sources

Energy, Mines and Resources Canada.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *General Review of the Mineral Industries, Mines, Quarries and Oil Wells*, annual. 26-201.
- *Canada's Mineral Production, Preliminary Estimates*, annual. 26-202
- *Metal Mines*, annual. 26-233
- *Non-metal Mines*, annual. 26-224
- *Quarries and Sand Pits*, annual. 25-225

TABLES

LEGEND

..	*not available*	*e*	*estimate*
...	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

17.1 VALUE OF MINERAL PRODUCTION[1], BY CLASS, SELECTED YEARS, AND BY PROVINCE, 1988-90 (THOUSAND DOLLARS)

Year and province or territory	Metallics	Non-metallics	Structural materials	Coal	Other minerals[2]	Total
1970	3,073,344	480,538	450,446	86,067		4,090,395
1975	4,795,477^{r}	939,180	958,982	586,423		7,280,062
1980	9,696,956	2,532,361	1,668,577	932,000		14,829,894
1981	8,753,468	2,708,452	1,776,974	1,072,500	135,634	14,447,028
1982	6,874,197	1,973,801	1,729,584	1,294,476	215,536	12,087,594
1983	7,398,943^{r}	1,907,210^{r}	1,833,973	1,303,944	244,773	12,688,843
1984	8,670,372	2,366,529	1,951,482^{r}	1,794,625	401,405	15,184,413
1985	8,709,412^{r}	2,733,461^{r}	2,125,218^{r}	1,845,130	41,114	15,454,336
1986	8,797,705^{r}	2,522,182^{r}	2,341,123	1,725,888	21,615	15,408,513
1987	10,962,122	2,381,433	2,743,770	1,641,300		17,728,625
1988	13,607,895	2,710,298	2,863,583	1,804,330		20,986,106
1989	13,982,451	2,594,865	2,897,202	1,907,080	..	21,381,598
1990^{p}	12,777,666	2,385,190	2,633,058	1,871,000	...	19,666,913
1988						
Newfoundland[3]	788,411	36,890	38,448	—	...	863,748
Prince Edward Island	—	—	2,138	—	...	2,138
Nova Scotia	39,290	99,368	98,514	215,900	...	453,073
New Brunswick	604,046	226,908	46,319	33,530	...	910,803
Quebec	1,660,151	475,644	575,594	—	...	2,711,389
Ontario	5,226,357	252,948	1,335,935	—	...	6,815,241
Manitoba	1,425,639	11,406	110,592	—	...	1,547,637
Saskatchewan	609,464	1,036,654	52,619	121,650	...	1,820,387
Alberta	472	453,201	311,870	458,850		1,224,394
British Columbia	1,961,596	114,336	274,760	974,400	...	3,325,092
Yukon	486,832	183	5,184	—	...	492,199
Northwest Territories	805,636	9,652	11,199	—	...	826,487
Total Canada	13,607,895	2,717,192	2,863,171	1,804,330	...	20,992,588
1989						
Newfoundland[3]	822,268	35,346	38,823	—	...	896,437
Prince Edward Island	—	—	2,214	—	...	2,214
Nova Scotia	43,184	99,829	99,009	199,480	...	441,502
New Brunswick	582,439	201,998	45,896	33,740	...	864,073
Quebec	1,750,826	534,869	570,124	—	...	2,855,818
Ontario	5,569,930	240,577	1,362,749	—	...	7,173,255
Manitoba	1,463,608	15,011	98,738	—	...	1,577,357
Saskatchewan	458,143	907,240	46,876	114,550	...	1,526,809
Alberta	359	413,770	291,218	500,320	...	1,205,667
British Columbia	1,828,639	136,432	319,723	1,058,990	...	3,343,784
Yukon	528,196	39	5,675	—	...	533,910
Northwest Territories	934,861	9,754	16,157	—	...	960,773
Total Canada	13,982,451	2,594,865	2,897,202	1,907,080	...	21,381,598

17.1 VALUE OF MINERAL PRODUCTION[1], BY CLASS, SELECTED YEARS, AND BY PROVINCE, 1988-90 (THOUSAND DOLLARS) (concluded)

Year and province or territory	Metallics	Non-metallics	Structural materials	Coal	Other minerals[2]	Total
1990						
Newfoundland[3]	790,133	33,161	38,279	—		861,573
Prince Edward Island	—	—	3,312	—		3,312
Nova Scotia	58,579	107,729	86,782	199,200		452,290
New Brunswick	596,003	206,533	46,159	37,400		886,094
Quebec	1,903,433	524,461	539,893	—		2,967,787
Ontario	4,913,736	223,851	1,186,258	—		6,323,846
Manitoba	1,111,716	11,492	88,843	—		1,212,051
Saskatchewan	280,640	795,649	38,647	100,100		1,215,036
Alberta	4,303	348,017	269,508	485,800		1,107,628
British Columbia	1,700,118	127,927	313,203	1,048,500		3,189,748
Yukon	537,090	28	4,015	—		541,133
Northwest Territories	881,914	6,342	18,159	—		906,415
Total Canada	12,777,666	2,385,190	2,633,058	1,871,000		19,666,913

[1] *Excludes oil and gas.*
[2] *"Other minerals" category discontinued in 1987.*
[3] *Includes Labrador.*

17.2 GROSS DOMESTIC PRODUCT AT FACTOR COST, IN 1986 PRICES, PRINCIPAL MINING INDUSTRIES, 1986-90 (MILLION DOLLARS[1])

Mining industry	1986	1987	1988	1989	1990^p
Metal mines					
Placer gold and gold quartz	880.6	988.2	1,137.3	1,507.2	1,519.5
Iron	452.7	506.1	545.1	561.4	465.4
Other metal mines	2,346.5	2,730.7	2,746.6	2,515.7	2,522.0
Non-metal mines (except coal)	723.0	799.2	830.7	823.8	771.7
Quarrying	643.7	692.6	713.1	665.1	602.6
Coal	755.3	845.7	982.5	985.1	948.7
Services related to mineral extraction	1,937.9	1,674.3	1,909.6	1,374.1	1,398.6
Total, mines (incl. milling) quarries and coal	7,739.7	8,236.8	8,864.9	8,432.4	8,228.5

[1] *1986 dollars.*

17.3 QUANTITY AND VALUE OF MINERAL PRODUCTION[1], 1986-90

Mineral		Quantity ('000)				
		1986	1987	1988	1989	1990[p]
Metals						
Antimony	kg	3 805	3 706	3 171	2 818	653
Bismuth	"	153	165	181	157	100
Cadmium	"	1 484	1 481	1 664	1 711	1 643
Cobalt	"	2 297	2 490	2 398	2 344	2 291
Copper	"	698 527	794 149	758 478	704 432	779 566
Gold	g	102 899	115 818	134 813	159 494	164 991
Iron ore	t	36 167	37 702	39 934	39 445	36 443
Lead	kg	334 342	373 215	351 148	268 887	224 000
Molybdenum	"	11 251	14 771	13 535	13 543	13 481
Nickel	"	163 639	189 086	198 744	195 554	196 606
Platinum group	g	12 190	10 930	12 541	9 870	11 209
Selenium	kg	353	430	321	213	389
Silver	"	1 088	1 375	1 443	1 312	1 400
Tantalum	"	39	36	18	97	100
Tellurium	"	20	13	19	8	13
Tungsten	"	2 470	[2]	[2]	[2]	[2]
Uranium	"	11 502	13 612	12 066	10 995	9 458
Zinc	"	988 173	1 157 936	1 370 000	1 272 854	1 285 439
Non-metals						
Asbestos	t	662	665	710	701	665
Barite	"	40	42	51	39	48
Gemstones	kg	354	309	488	901	229
Gypsum	t	8 803	9 094	8 814	8 196	8 202
Nepheline syenite	"	467	506	540	551	536
Peat	"	738	662	736	812	749
Potash (K^2O)	"	6 753	7 668	8 154	7 014	7 015
Quartz	"	2 640	2 662	...		
Salt	"	10 332	10 129	10 687	11 057	11 097
Soapstone, talc	"	123	136	146	145	137
Sodium sulphate	"	371	342	331	327	347
Sulphur in smelter gas	"	758	723	856	809	929
Sulphur, elemental	"	6 966	5 809	5 981	5 750	5 802
Structural materials						
Clay products[2]	t	...	...	...	...	...
Cement	"	10 611	12 603	12 350	12 591	11 252
Lime	"	2 243	2 330	2 518	2 552	2 404
Sand and gravel	"	257 677	278 916	287 653	274 848	250 070
Stone	"	97 602	113 291	120 126	118 016	112 005
Coal	"	57 811	61 211	70 644	70 527	68 450

17.3 QUANTITY AND VALUE OF MINERAL PRODUCTION[1], 1986-90 (concluded)

Mineral	Value ($'000)				
	1986	1987	1988	1989	1990[P]
Metals					
Antimony	12,332	9,698	8,094	6,957	1,379
Bismuth	1,413	1,754	2,811	2,315	899
Cadmium	5,673	8,609	31,747	28,027	14,388
Cobalt	46,623	46,654	45,090	45,781	52,490
Copper	1,426,393	1,923,080	2,393,568	2,388,748	2,494,596
Gold	1,689,292	2,204,472	2,331,989	2,315,860	2,378,344
Iron ore	1,342,666	1,395,620	1,323,249	1,369,193	1,312,245
Lead	227,654	394,817	356,064	279,643	268,128
Molybdenum	90,111	126,315	121,105	111,728	98,906
Nickel	979,101	1,273,043	2,790,417	3,042,278	2,023,952
Platinum group	[2]	181,849	190,914	141,730	205,553
Selenium	6,059	8,152	8,790	4,138	5,676
Silver	275,011	424,064	386,271	274,737	255,588
Tantalum	3,470	2,364	1,695	10,540	8,439
Tellurium	706	411	1,007	591	1,049
Uranium	1,042,334	1,182,209	1,018,665	912,684	867,972
Zinc	1,200,630	1,475,211	2,264,611	2,739,182	2,477,041
Non-metals					
Arsenious trioxide	[3]	732	2,366	1,286	288
Asbestos	234,053	237,990	251,088	267,341	256,111
Barite	4,215	4,115	4,014	3,069	3,987
Fluorspar	[3]	[2]	[2]	[2]	[2]
Gemstones	1,287	1,622	2,143	3,238	499
Gypsum	83,072	86,984	85,650	86,127	80,862
Nepheline syenite	18,922	20,664	21,775	23,077	24,309
Peat	80,152	75,484	82,832	99,666	89,535
Potash (K^2O)	584,304	745,009	1,167,747	1,017,525	907,168
Quartz[4]	41,640	44,992			
Salt	239,466	238,626	246,722	228,476	239,864
Soapstone, talc	14,182	14,307	16,023	15,108	15,365
Sodium sulphate	33,012	26,545	25,016	26,344	28,508
Sulphur in smelter gas	72,614	80,138	85,179	86,909	93,411
Sulphur, elemental	857,584	522,907	444,007	419,541	363,707
Structural minerals					
Clay products[5]	179,515	210,756	196,724	200,138	143,072
Cement	824,344	997,227	971,293	960,000	864,929
Lime	171,359	167,566	191,672	201,571	180,256
Sand and gravel	677,250	785,180	865,900	874,078	794,130
Stone	488,655	583,041	637,993	661,415	650,670
Coal	1,725,888	1,641,300	1,804,330	1,907,080	1,871,000
Other minerals[6]	21,615	—	—	—	—
Total, all minerals[7]	15,408,513	17,728,625	20,986,106	21,381,598	19,666,913

[1] *Excludes petroleum and natural gas.*

[2] *Confidential.*

[3] *Value included in "Other minerals".*

[4] *Beginning in 1988, quartz is included in sand and gravel.*

[5] *Bentonite and diatomite are included in clay products.*

[6] *The "Other minerals" category was discontinued in 1987*

[7] *Confidential data excluded at commodity level, but included in totals.*

17.4 PRODUCERS' SHIPMENTS OF COPPER (TONNES), BY PROVINCE AND TOTAL VALUE

Province or territory and value		1984	1985	1986	1987	1988	1989	1990[p]
Newfoundland		1 146	—	—	—	—	—	—
Nova Scotia		—	—	—	[1]	[1]	[1]	[1]
New Brunswick		7 800	6 774	6 298	7 233	7 966	7 802	6 475
Quebec		67 618	73 531	51 622	66 848	47 633	65 135	94 207
Ontario		292 220	284 692	264 870	287 354	286 536	271 914	277 067
Manitoba		67 537	69 071	65 369	66 121	53 072	50 484	55 641
Saskatchewan		4 798	4 976	3 506	2 335	2 168	[1]	[1]
British Columbia		280 638	299 560	306 855	364 134	360 570	308 348	345 685
Yukon		—	10	6	[1]	[1]	—	—
Northwest Territories		69	23	1	—	1	—	—
Total		721 826	738 637	698 527	794 149	758 478	704 432	779 566
Value	$'000	1,365,695	1,466,932	1,426,392	1,923,080	2,393,568	2,388,748	2,494,596

[1] *Confidential.*

17.5 PRODUCERS' SHIPMENTS OF NICKEL (TONNES), BY PROVINCE AND TOTAL VALUE

Province and value		1984	1985	1986	1987	1988	1989	1990[p]
Ontario		133 048	131 035	121 851	130 171	128 558	130 632	128 402
Manitoba		40 677	38 936	41 788	58 915	70 186	64 922	68 203
Total		173 725	169 971	163 639	189 086	198 744	195 554	196 606
Value	$'000	1,166,140	1,217,388	979,100	1,273,043	2,790,417	3,042,278	2,023,952

17.6 IRON ORE SHIPMENTS AND PRODUCTION OF PIG IRON AND STEEL INGOTS AND CASTINGS

Year	Iron ore shipments						Production of pig iron '000 t	Production of steel ingots and castings '000 t
	Newfoundland '000 t	Quebec '000 t	Ontario '000 t	British Columbia '000 t	Total quantity '000 t	Value $'000		
1984	21 184	14 020	4 555	171	39 930	1,482,352	9 643	14 699
1985	20 192	14 875	4 347	88	39 502	1,462,254	9 665	14 637[r]
1986	19 184	13 471	3 461	51	36 167	1,342,666	9 249	14 081
1987	18 423	15 988	3 229	61	37 702	1,395,620	9 719	14 737
1988	20 507	16 433	2 934	59	39 934	1,323,249	9 498	14 866
1989	20 662	15 363	3 347	73	39 445	1,369,193	10 139	13 024[1]
1990[p]	19 955	15 300	1 084	103	36 443	1,312,245	8 618[2]	10 569[2]

[1] *Steel castings excluded due to confidentiality.*

[2] *January to October.*

17.7 PRODUCERS' SHIPMENTS OF LEAD (TONNES) FROM CANADIAN ORES, BY PROVINCE AND TOTAL VALUE

Province or territory and value		1984	1985	1986	1987	1988	1989	1990^p
Newfoundland		4 845	—	—	—	—	—	—
Nova Scotia		—	—	—	[1]	—	—	[1]
New Brunswick		71 732	68 375	66 590	66 485	74 543	65 180	51 278
Quebec		—	—	—	—	—	—	—
Ontario		9 478	3 812	6 288	6 092	2 485	1 074	[1]
Manitoba		817	741	590	[1]	457	1 365	1 908
British Columbia		85 148	116 811	91 947	57 078	105 103	67 006	20 449
Yukon		2 083	1 470	35 091	[1]	117 058	94 529	106 489
Northwest Territories		90 198	77 083	133 836	131 744	51 502	39 734	38 091
Total		264 301	268 292	334 342	373 215	351 148	268 887	224 000
Value	$'000	195,292	154,845	227,653	394,817	356,064	279,643	268,128

[1] *Confidential*

17.8 PRODUCERS' SHIPMENTS OF ZINC (TONNES), BY PROVINCE AND TOTAL VALUE

Province or territory and value		1984	1985	1986	1987	1988	1989	1990^p
Newfoundland		42 620	32 730	5 712	7 643	31 817	27 362	24 498
Nova Scotia		—	—	—	—	[1]	[1]	[1]
New Brunswick		232 792	197 503	161 807	180 298	261 089	201 550	249 605
Quebec		58 249	75 812	37 126	91 139	82 031	100 638	103 414
Ontario		303 425	280 475	265 248	294 309	326 698	266 158	281 131
Manitoba		48 854	64 688	61 463	63 551	53 746	72 096	73 694
Saskatchewan		6 160	5 663	3 527	1 764	[1]	[1]	[1]
British Columbia		95 508	108 072	137 583	114 117	142 833	119 376	59 103
Yukon		173	109	50 634	147 045	143 939	154 709	170 128
Northwest Territories		274 920	284 223	265 073	258 070	325 321	329 001	317 298
Total		1 062 701	1 049 275	988 173	1 157 936	1 370 000	1 272 854	1 288 439
Value	$'000	1,495,233	1,315,791	1,200,630	1,475,211	2,264,611	2,739,182	2,477,041

[1] *Confidential.*

17.9 PRODUCERS' SHIPMENTS OF GOLD (KILOGRAMS), BY PROVINCE AND TOTAL VALUE

Province or territory and value		1984	1985	1986	1987	1988	1989	1990^p
Newfoundland		34	—	—	[1]	[1]	[1]	[1]
Prince Edward Island		—	—	—	—	—	—	..
Nova Scotia		—	—	—	[1]	[1]	[1]	[1]
New Brunswick		781	283	374	[1]	393	359	744
Quebec		28 632	30 104	28 342	29 543	33 538	36 966	39 388
Ontario		28 292	32 262	46 279	52 917	62 463	78 675	79 647
Manitoba		2 154	2 162	2 555	3 697	4 469	4 056	2 382
Saskatchewan		188	225	14	1 048	1 480	2 829	3 295
Alberta		16	28	36	43	27	25	[1]
British Columbia		7 656	6 720	9 249	11 224	13 067	15 635	16 106
Yukon		2 960	3 065	3 547	4 674	5 052	5 652	4 602
Northwest Territories		12 732	12 713	12 503	11 740	11 880	12 208	15 063
Total		83 445	87 562	102 899	115 818	134 813	159 494	164 991
Value	$'000	1,252,283	1,219,653	1,689,292	2,204,472	2,331,989	2,315,860	2,378,344

[1] *Confidential.*

17.10 PRODUCERS' SHIPMENTS OF SILVER (KILOGRAMS), BY PROVINCE AND TOTAL VALUE

Province or territory and value		1984	1985	1986	1987	1988	1989	1990^p
Newfoundland		7 000	—	—	—	[1]	[1]	..
Prince Edward Island		—	—	—	—	—	—	—
Nova Scotia		—	—	—	[1]	[1]	[1]	[1]
New Brunswick		217 000	175 000	163 000	182 139	202 635	191 381	114 744
Quebec		47 000	61 000	62 000	162 596	139 665	147 804	146 210
Ontario		541 000	456 000	348 000	440 819	434 325	348 528	366 524
Manitoba		36 000	40 000	37 000	40 992	32 257	36 205	34 113
Saskatchewan		5 000	6 000	3 000	1 762	[1]	[1]	[1]
Alberta		—	—	—	[1]	—	—	—
British Columbia		361 000	379 000	380 000	400 650	446 864	498 013	622 749
Yukon		54 000	47 000	73 000	132 822	159 135	70 944	84 474
Northwest Territories		59 000	33 000	22 000	12 988	25 867	18 246	29 265
Total		1 327 000	1 197 000	1 088 000	1 374 946	1 443 166	1 312 433	1 399 572
Value	$'000	461,868	333,839	275,011	424,064	386,271	274,737	255,588

[1] *Confidential*

17.11 QUANTITY AND VALUE OF PRODUCERS' SHIPMENTS OF URANIUM (U^3O^8), BY PROVINCE

Year	Ontario		Saskatchewan		Total	
	Quantity t	Value $'000	Quantity t	Value $'000	Quantity t	Value $'000
1982	5 092	589,057	2 551	248,411	7 643	837,468
1983	4 767	546,306	2 056	121,366	6 823	667,672
1984	4 552	544,779	5 720	356,794	10 272	901,573
1985	4 499	552,561	5 942	449,566	10 441	1,002,127
1986	4 752	566,134	6 750	476,200	11 502	1,042,334
1987	4 901	581,294	8 711	600,915	13 612	1,182,209
1988	3 872	446,178	8 194	572,487	12 066	1,018,665
1989	4 099	500,348	6 896	412,336	10 995	912,684
1990^p	4 894	635,359	4 564	232,614	9 458	867,972

17.12 PRODUCERS' SHIPMENTS OF SALT (THOUSAND TONNES), BY PROVINCE AND TOTAL VALUE

Province and value		1984	1985	1986	1987	1988	1989	1990^p
Ontario		6 412	5 829	6 240	5 690	6 599	7 282	6 138
Saskatchewan		402	437	460	410	312	312	409
Alberta		1 264	1 404	1 191	1 256	1 426	1 426	1 354
Total		10 235	10 085	10 332	10 129	10 687	11 057	11 097
Value	$'000	210,191	215,362	239,466	238,626	246,722	228,478	239,864

17.13 QUANTITY AND VALUE OF SULPHUR PRODUCED AND SOLD

Item	Quantity ('000 t)						
	1984	1985	1986	1987	1988	1989	1990^p
Sulphur in smelter gases[1]	844	822	758	723	856	809	929
Sales of elemental sulphur[2]	8 353	8 102	6 966	5 809	5 981	5 750	5 802
	Value ($'000)						
	1984	1985	1986	1987	1988	1989	1990^p
Sulphur in smelter gases[1]	63,200	86,342	72,614	80,138	85,179	86,909	93,411
Sales of elemental sulphur[2]	609,141	1,026,202	857,584	522,907	444,007	419,541	363,707

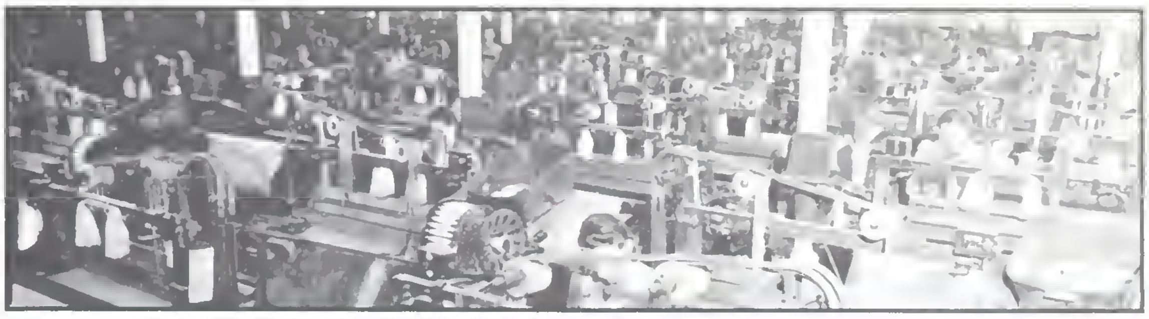
[1] *Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida and Port Maitland*

[2] *Recovered from sour natural gas and nickel sulphide ores.*

Source

Energy, Mines and Resources Canada.

Chapter 18



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INDUSTRY AND BUSINESS

18.1 INTRODUCTION

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ECONOMIC DEVELOPMENTS in the course of Canada's history have been greatly influenced by changes in the industrial structure of the economy. From Confederation to World War I, agriculture dominated economic life. From World War I through to the 1950s, the mining, manufacturing and construction sectors were pre-eminent.

The transfer of a large part of the labour force from low-productivity agriculture to high-productivity manufacturing accounted for much of Canada's rapid economic progress in the twentieth century. Employment in manufacturing grew from 13.1% of total employment in 1871 to 26.1% by 1950, while its share of output grew from 19.0% to 30.7%.

Beginning in the 1960s, services began to contribute an increasing share of total output and employment. By 1990, a record 71.2% of all jobs were in services, compared to just under 16% in manufacturing. This trend will likely continue in the 1990s.

Some view the growth of services as a threat to Canada's standard of living. Service industries are often negatively perceived in terms of pay and productivity, and it is often assumed that services are inherently less useful than goods in creating new income and wealth. However, these perceptions do not hold up to statistical scrutiny. From 1981 to 1989, productivity in business sector services grew by 13.7%, only slightly less than the 16.4% gain in goods-producing industries. These service gains partly reflect strong investment and rapid technological change in industries such as trade, finance and commercial services.

Moreover, the distinction between goods and services is becoming blurred. Service industries such as trade and transportation are essential to the flow of goods in the economy. At the same time, recent growth in services is partly the result of manufacturing firms "contracting-out" services previously done "in-house" — advertising and legal services, for example. Hence many service industries are dependent on a vibrant manufacturing industry for further growth.

In both goods-producing and service-producing industries, prosperity depends on responsiveness to the marketplace. Manufacturers must offer strong service to support their products, and service businesses must deliver a "product" that meets the needs of their clients.

In Canada, government and business work in partnership to promote economic growth. All levels of government support and assist business through a variety of legislation, policies and programs.

To monitor Canada's business environment, Statistics Canada gathers data on a monthly, annual and occasional basis. As well as measuring successes and failures, these data indicate trends and opportunities, and play an increasing role in business planning.

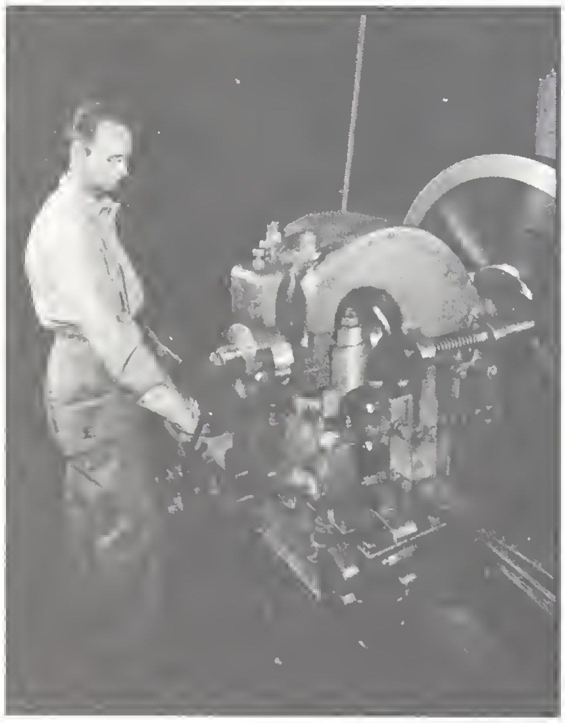
The statistics reported in this chapter cover the mid-1980s to 1988, a period characterized by generally favourable economic conditions, including a relatively low rate of inflation and significant declines in unemployment and interest rates.

18.2 MANUFACTURING

FACTORIES

Factories began to appear in Canada between 1860 and 1870 and quickly became an important part of the Canadian economy. In 1890, there were 75,964 factories in Canada.

By 1988, there were only about 40,000 factories left, but the size of these facilities had increased considerably. Many companies had condensed their operations, and together they employed 1,947,090 people. In 1890, almost twice the number of factories had only employed 369,595 people.



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Tending an industrial metal blank cutter, 1948.

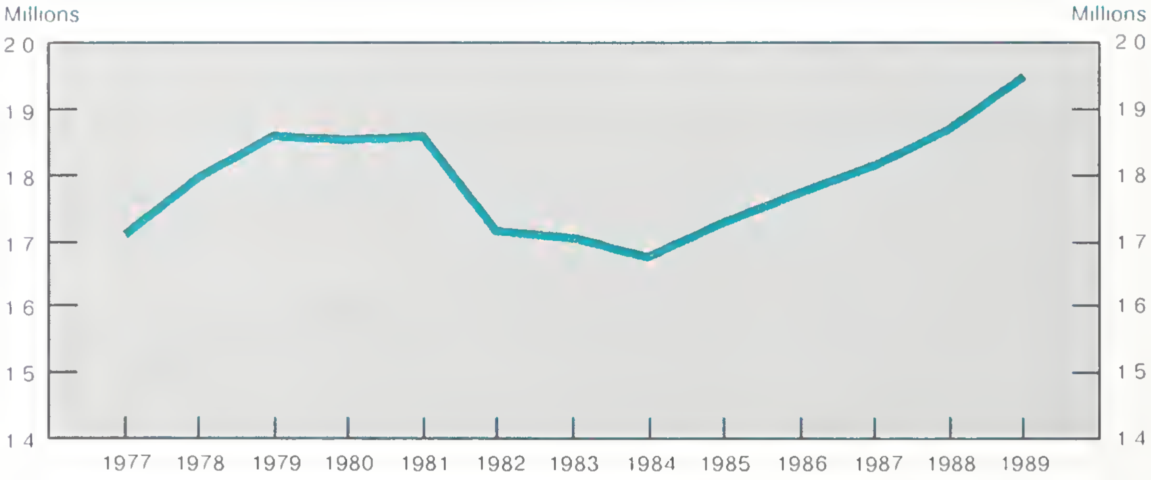
The Canadian manufacturing sector includes over 20 industry groups that manufacture goods for both industrial and consumer use. The sector turned in a relatively strong performance in 1988 with the value of shipments reaching $298.2 billion, a 9.7% increase over 1987. Previous current dollar increases were 7.2% in 1987, 1.9% in 1986 and 8.0% in 1985. The weak performance in 1986 was largely the result of the precipitous drop in world oil prices that year.

Major industry groups The strongest performers in 1988 were those manufacturers classified as "heavy industry". The transportation equipment group of industries, producing mainly motor vehicles and parts, led with a 19.4% increase to $51.7 billion, followed by the primary metals group (mostly steel and smelting) with an 18.6% jump to $22.7 billion. Other groups posting strong gains were the plastic products group (16.4% to $5.9 billion), the electrical and electronic products group (14.9% to $18.2 billion), the machinery industries group (14.8% to $10.0 billion) and the printing, publishing and allied industries group (12.0% to $12.5 billion).

The weakest group in 1988 was refined petroleum and coal products. Influenced by fluctuating world oil prices, shipments dropped 9.4% to $14.9 billion. The smallest group, leather and allied products, declined 1.7% to $1.3 billion, while the primary textiles group managed an increase of only 1.6% to $3.2 billion.

Chart 18.1

EMPLOYMENT IN MANUFACTURING[1], 1977-89



[1] Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.

Provincial highlights Nova Scotia recorded the strongest growth in manufactured shipments in 1988, with a 15.0% increase to $5.5 billion. This was a remarkable turnaround from 1987, when Nova Scotia had the weakest performance among the provinces, with only 2.1% growth. Quebec was second in 1988, with a 10.9% rise to $73.8 billion, followed by Alberta (10.2% to $18.1 billion) and Ontario (9.8% to $157.5 billion).

New Brunswick was the weakest performer in 1988, declining 0.1% to $5.6 billion, followed by Yukon and the Northwest Territories, which gained only 2.7%, and Saskatchewan with an increase of 2.9%.

The growth in the transportation equipment group was concentrated in Ontario and Quebec, which accounted for 82% and 12% of the national total, respectively. The increase in the primary metals group was the result of outstanding growth in the West and solid gains in Central Canada. Growth in the plastic products group was spread across the country, with some of the smaller provinces showing the largest percentage gains. In both the electric and electronic products group and the machinery group, Ontario had only moderate growth; Quebec was the leading contributor to increased shipments. Some smaller provinces also had strong performances. Increases for printing, publishing and allied industries were remarkably uniform across the nation.

The trend toward increased concentration of manufacturing in Ontario, Alberta and British Columbia appears to have subsided in 1988, except in British Columbia. However, Ontario still led in concentration of manufacturing activity, with 52.8% of the national total, followed by Quebec with 24.7%, British Columbia with 8.6% and Alberta with 6.1%.

18.3 SERVICES

Despite the diversity of service businesses in Canada, they can be grouped broadly into leisure and personal services; food and beverage services; accommodation; and business services. Statistics Canada tracks a wide range of services offered to businesses and households.

Leisure and personal services This category comprises two main groups: amusement and recreation, and personal and household services. Generally, these services are used by individuals, but in some cases, for example linen supply, business use can be significant.

In 1988, Canada's 45,500 leisure and personal services firms earned an estimated $9.9 billion. (This figure excludes some industries, such as gambling operations, that are not covered by regular surveys.)

The amusement and recreation group, with over 17,000 firms, had earnings of $5.7 billion in 1988. Over a third of this total came from the motion picture production, distribution and exhibition industries.

Small businesses (those earning less than $2 million annually) contributed nearly 60% of total revenues. Some industries, such as the motion picture distributing industry, are dominated by a few large firms (revenues of over $5 million), while others, such as barber and beauty shops, are characterized by many small firms. (See Table 18.7.)

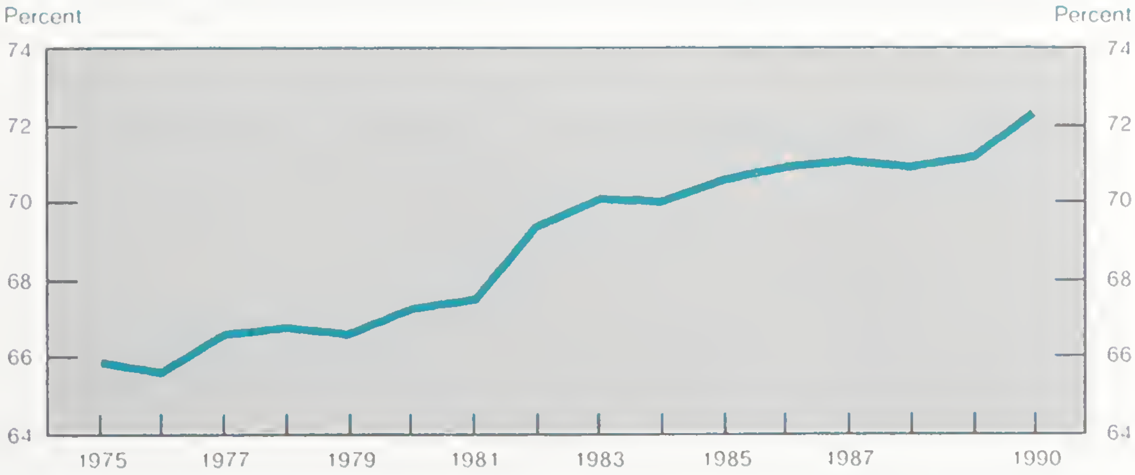
Food and beverage service industries In January 1980, Statistics Canada introduced a monthly sample survey of the food and beverage service group. According to this survey, receipts for these industries in 1989 were $17.3 billion, an increase of 9.6% over the previous year. Of this total, licensed restaurants accounted for $7.5 billion, unlicensed restaurants for $4.9 billion, take-out food services for $2.2 billion, caterers for $1.5 billion, and taverns, bars and night clubs for $1.2 billion. The most significant increases were reported by unlicensed restaurants (11.4%) and by caterers (13.3%). (See Table 18.8.)

Accommodation services Total estimated revenues for all traveller accommodation industries in 1987 were $6.9 billion, a 4.3% increase over 1986. The hotels and motor hotels industry accounted for 78% of the total, with the motels industry accounting for another 13%. (See Table 18.9.)

Business services This category comprises two major groups – the business service industries, and other service industries. Firms in these groups provide services primarily to the business community, rather than to government or to the general public.

Chart 18.2

EMPLOYMENT IN SERVICE INDUSTRIES AS A PERCENTAGE OF TOTAL EMPLOYMENT



W.J. Topley/National Archives of Canada/PA 33992

Delivery service, circa 1922.

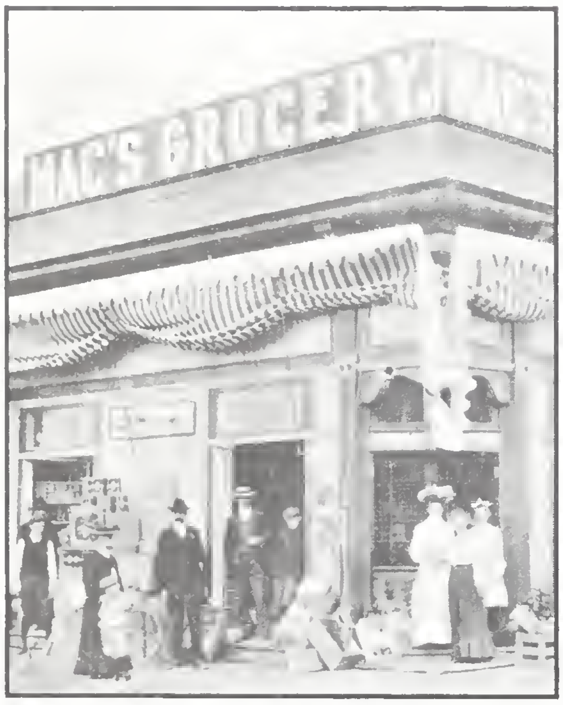
Department of the Interior/National Archives of Canada

Dining on a C.P.R. train.

5¢ 10¢ & 15¢ STORE. G.D.C ARLTON & CO.

W J Topley/National Archives of Canada/PA-42681

Opening day sale at the local "Five and Dime", Ottawa, 1910.



National Archives of Canada/C-7068

Early grocery store in the Yukon.

Businesses in this category had combined revenues of $40 billion in 1988, based on preliminary estimates. (This figure excludes several industries — such as accounting, legal and management consulting services — not covered by regular surveys.) The business services group, comprising about 70,000 firms, contributed $25 billion of this total, with the remaining $15 billion coming from the 46,000 businesses in other service industries.

Small businesses (those with annual revenues of less than $2 million) accounted for nearly half of total revenues. As with leisure and personal services, some industries in the sector, such as computer services, are dominated by a few large firms, while photographers, advertising services, services to buildings and dwellings, and other repair services are characterized by large numbers of small firms. (See Table 18.10.)

18.4 MERCHANDISING

The merchandising industry covers the principal links of the marketing chain – wholesalers and retailers. Wholesalers include wholesale merchants, agents and brokers; primary products dealers; manufacturers' sales branches; petroleum bulk tank plants; and truck distributors. Retailing encompasses all sales of goods to final consumers, both through traditional stores and through channels such as direct selling and machine vending.

WHOLESALE TRADE

From 1984 to 1987, wholesale trade volume increased by about 20%, reaching $257.7 billion. (The value of goods passing through the wholesale sector is not the same as the total volume of wholesale trade; wholesale businesses sometimes sell to each other, which means that the value of the merchandise is recorded more than once.)

Wholesale merchants Wholesale merchants accounted for about 85% ($220.0 billion) of wholesale trade in 1987. Within this group, the shares of certain sectors have been fairly stable in recent years, with sales of all types of machinery accounting for 20.5% of total volume in 1987, followed by food at 16.3%. The next most important sectors were petroleum products and lumber and building materials.

Wholesale merchants in Quebec and Ontario accounted for 66.6% of total volume in 1987, up from 65.1% in 1986. All provinces except Manitoba had increases. Yukon and the Northwest Territories declined. (See Table 18.11.)

Agents and brokers The volume of trade for agents and brokers increased by nearly 12% from 1984 to 1987, but gross commissions fell by 7%. In 1987, the 4,005 establishments classified as agents or brokers reported a total volume of $37.7 billion. Gross commissions for the year were $1.0 billion, or 2.9% of the value of goods bought or sold on commission — this was down from 3.1% in 1986. The coal, coke and petroleum products group ranked first with $184.7 million in commissions, down almost 13% from 1986. Farm products ranked second with commissions of $152.5 million, down 8% from 1986.

Ontario and Quebec together accounted for 58.6% of commissions in 1987, with Quebec declining very slightly and Ontario increasing very slightly from 1986. Several other provinces reported decreased commissions in 1987.

RETAIL TRADE

The retail sector grew steadily throughout the second half of the 1980s. In 1988, total retail trade reached $165.2 billion, up 7.5% from 1987. However, after adjustment for inflation, the 1988 increase was 4.1%.

All retail businesses except variety stores shared in the growth of sales in 1988. Motor vehicle dealers had the largest increase — $3.7 billion.

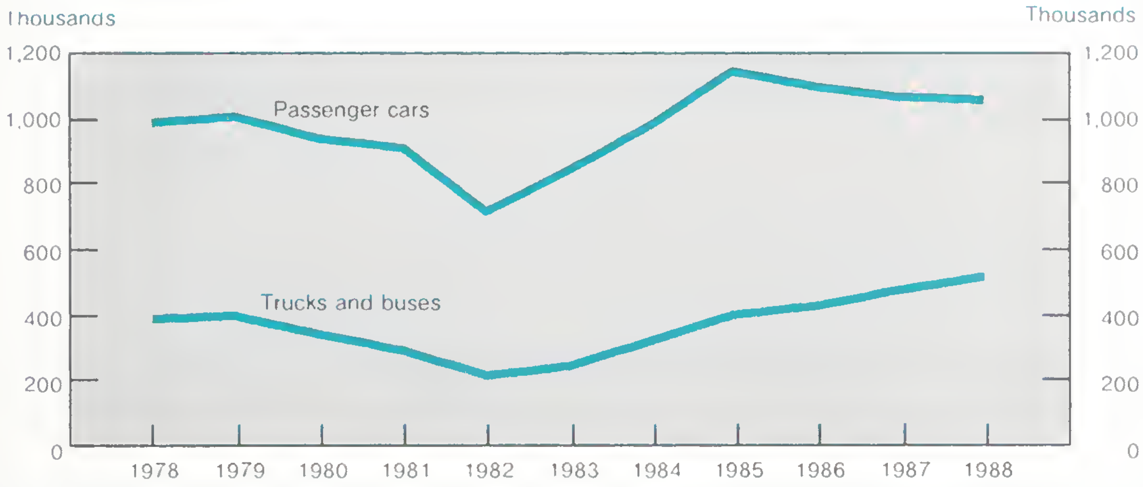
Sales were higher in every province in 1988, with increases ranging from 3.5% in Manitoba to 11.6% in Newfoundland. Ontario was the largest market in Canada, followed by Quebec and British Columbia. Ontario also led in retail sales per capita ($6,742), followed by Alberta ($6,679) and Nova Scotia ($6,352). The national average was $6,376. (See Table 18.14.)

Traditional retailing The market share held by independent stores has gradually increased in recent years, at the expense of department stores. In 1988, independents held 60.6% of the Canadian retail market, compared to 57.1% five years earlier. The growth of franchising is partly responsible for this shift, especially for hardware stores and supermarkets.

Retail sales of new cars are an important indicator of Canadian economic performance — they are a major consumer goods and services expenditure in the Gross Domestic Product. Independent retailers are predominant in the automotive sector, accounting for 98.8% of total sales in 1988. Of all sectors, the automotive sector was hardest hit by the 1982 recession; but it also had the strongest initial recovery. From 1983 to 1985, retail sales of new motor vehicles increased by record rates of 24% to 29%, moderating to annual increases of 10% to 12% from 1986 to 1988. Demand for passenger cars began to decline in 1986, but this was offset by strong sales of trucks and buses. (Most of the mini-vans and four-wheel-drive vehicles that became increasingly popular in the second half of the 1980s are classified as trucks.)

Chart 18.3

RETAIL SALES OF NEW MOTOR VEHICLES, 1978-88



Department or chain stores have the third largest volume of retail sales, after motor vehicle dealers and supermarkets. As well as being affected by the growth of independent and franchised retailing, department stores have also lost business to specialty chain stores. From 1985 to 1988, the market share held by department stores declined from 8.4% to 8.0%. Within the department store classification, discount or "junior" department stores have had larger increases (6.1% in 1988) than have major department stores (0.6% in 1988). (See Table 18.17 for more detailed sales figures.)

Non-store retailing Consumer goods are often sold through channels other than retail stores. These goods move to the consumer directly from the producer, manufacturer, importer, wholesaler or specialized direct seller. Statistics Canada conducts annual surveys of two forms of non-store retailing: sales through vending machines, and direct marketing sales through personal selling, mail orders, television offers and outdoor markets.

In 1987, vending machine sales of $400.0 million were recorded, an increase of 3.3% from 1986. (Some vending machine statistics cannot be separated from data collected by other surveys.)

Direct selling accounted for $2.8 billion in purchases by Canadian householders in 1987, a 13.1% increase from 1984. Mail and telephone order sales accounted for 25.6% of the total, followed by personal selling (individual canvassing or group demonstrations at house parties, etc.) at 24.2%.

Alcoholic beverages The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold by most of these authorities directly to the consumer, or to licensees for resale. However, in some provinces beer and wine are sold by breweries and wineries directly to consumers or to licensees for resale. In 1987, there were about 2,400 provincial government liquor stores and agencies.

CHEESE RECORDS

At the beginning of the 1900s, Canadian cheese factories were producing more than 100 million kilograms of cheese. By 1987, production had more than doubled, reaching 245.8 million kilograms.

A strange twist in Canada's cheese history comes to us via Canada's law books. In 1908, tampering with Canadian cheese during manufacturing became a punishable offence. The law was aimed at the practice of "filling" cheeses with everything from poor-quality curds to old cheese and flakes of paper. With an amendment to the *Inspection and Sales Act*, a fine was introduced ranging from $25 to $500.

Today, Canada produces dozens of quality cheeses; but it is probably best known for its Oka, originally developed and produced by Trappist monks at their monastery in Oka, near Montreal.

National Film Board/National Archives of Canada/PA 48801

Early cheese factory, New Brunswick.

Table 18.21 shows the value and volume of sales of alcoholic beverages from 1986-87 to 1988-89. Total value is not the same as total retail price; in some cases, only the selling price to licensees is recorded. Sales volume is a more accurate indicator of trends in consumption, although these figures include purchases by non-residents.

18.5 CO-OPERATIVES

Canadian Tribune Publishing Company/National Archives of Canada/PA-93681

Co-op shopping in the 1940s.

In 1989, co-operative membership rose an estimated 2% to over 3.2 million, while assets expanded by 6% to $7.6 billion.

The co-operative movement in Canada started among pioneer farmers. Over the decades, co-operative principles have been applied to many economic and social activities. Today, co-operatives fall into three main categories: marketing co-operatives that help members sell their output; consumer and supply co-operatives that provide goods to members; and associations that offer members services such as transportation, power, housing, and child care.

A co-operative is an incorporated, non-profit business organized to meet the economic, social or cultural needs of its members. All members share control of and responsibility for the co-operative, and benefits are returned to members in proportion to their use of its services.

The business volume of non-financial Canadian co-operatives was an estimated $15.3 billion in 1989, up 4% from 1988.

Revenues for farm product marketing co-ops increased 3% in 1989, reaching $8.1 billion. This increase was based on the strength of grains, oilseeds, poultry and forest products. Cattle, fish and maple products declined significantly after two years of strong gains. Co-operative dairy marketings declined 2% after several years of increases because of problems with quota allocations. Other marketing categories showed little or no change for the year.

Sales of consumer and supply goods rose 5% to $5.8 billion in 1989, led by agricultural supplies and petroleum, which both increased 7%. Co-operative food retailing faced intense competition, but managed a gain of 3%. Farm machinery sales slid 8% to a four-year low. Building material sales rose 4%.

Service co-op revenues climbed 5% to $1.1 billion in 1989. Grain handling revenues declined due to lower tonnages of higher-priced product in the drought-stricken 1988-89 crop year, but other services more than made up the difference, led by day care/nursery, medical, natural gas, housing and communications co-operatives.

18.6 TOURISM

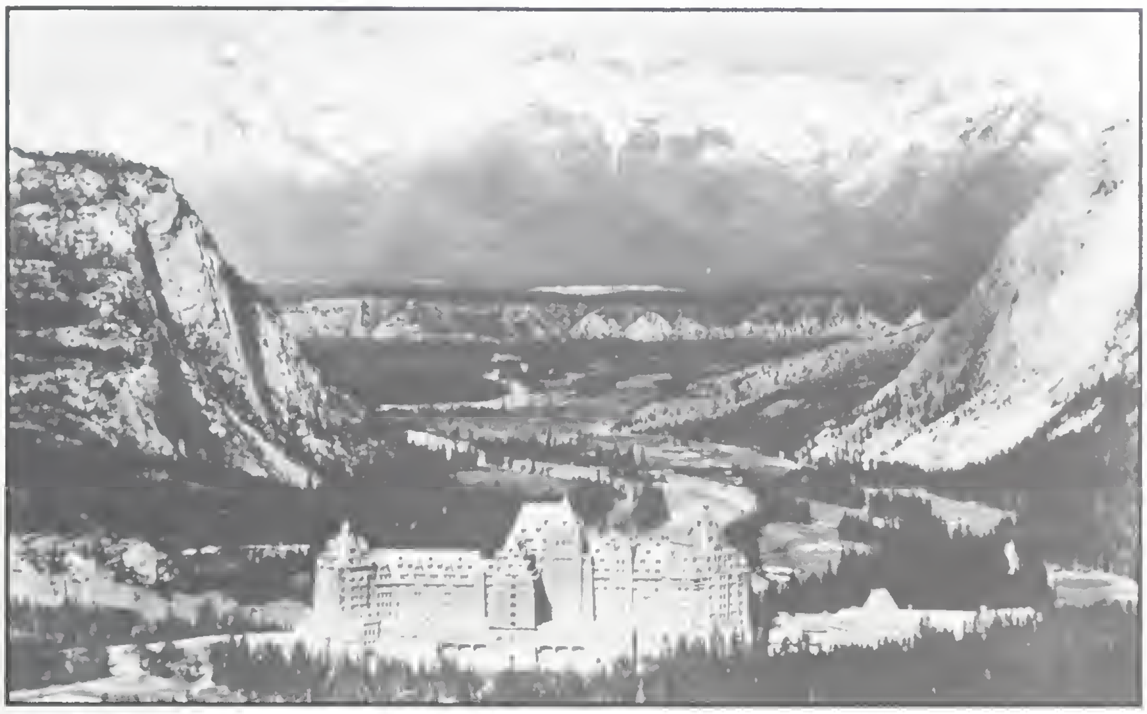
Tourism has become increasingly important since World War II, with worldwide revenues currently estimated at $2.6 trillion.

Essentially, this sector comprises goods and services provided during the course of travel for pleasure, business, family or other reasons. The wide range of tourist activities makes it difficult to accurately measure the output of the industry, but generally the sector consists of accommodation, transportation, food services, travel agents, tour operators, and recreation and amusement services.

Tourism already employs more people than any other single industry, and will likely continue to grow in the 1990s.

Tourism contributes much to the Canadian economy. In 1989, Canadians spent $17.8 billion on an estimated 80.3 million overnight domestic trips. In the same year, 15.1 million foreign visitors stayed one night or more in Canada. The 12.2 million overnight visitors from the United States spent $4.3 billion, while 2.9 million overseas visitors spent $2.9 billion.

Tourism is Canada's third largest earner of foreign exchange, after autos and auto parts. In recent years, spending by foreign visitors to Canada has increased an average of 9% annually, one of the highest rates for an industrialized nation. Total tourism revenues in 1989 were $25.0 billion — 4% of Gross Domestic Product (GDP).



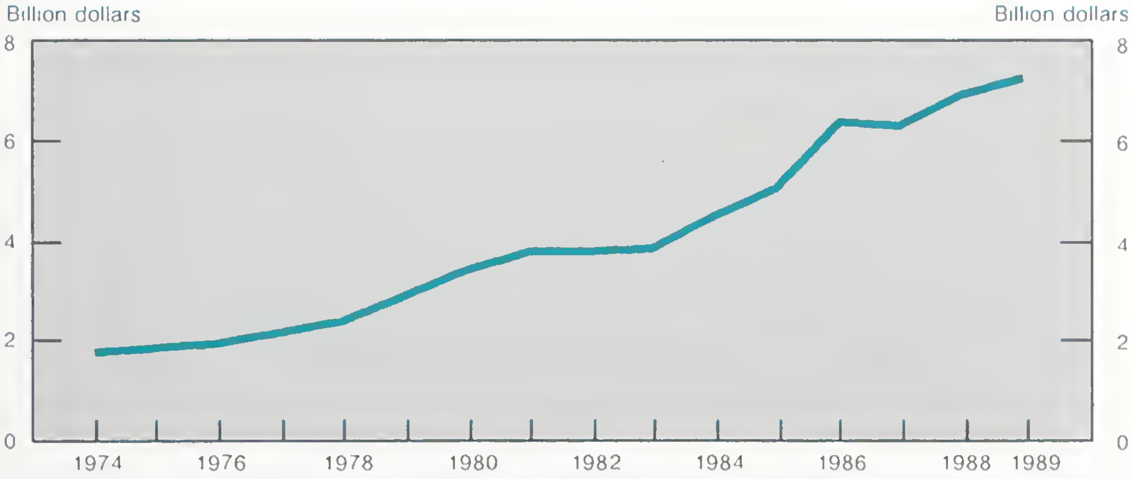
National Film Board/National Archives of Canada/PA 148556

Banff Springs Hotel in the 1920s.

In September 1990, after two years of nationwide consultations, Industry, Science and Technology Canada unveiled a new Federal Tourism Policy. The Policy aims to help industry meet the challenge of intense international competition and changing markets. Recognizing tourism as a strategic sector of the economy, the Policy calls for increased co-operation between the federal government, provincial/territorial governments and the private sector, as well as improved co-ordination of programs and policies for federal departments involved with tourism.

Chart 18.4

RECEIPTS ON TRAVEL BETWEEN CANADA AND OTHER COUNTRIES



18.7 GOVERNMENT SERVICES

Basic protection for business The federal government protects innovative and original products through the intellectual property directorate of Consumer and Corporate Affairs Canada. Legislation covers patents, trade-marks, copyright, industrial design and timber marks.

Patents issued under the Patent Act come into force on the date of issue and are valid for 20 years. The official journal of the patent office, the *Patent Office Record*, is published weekly.

THE FEDERAL BUSINESS DEVELOPMENT BANK

Canada's small and medium businesses are a mainstay of the nation's economy, and the ***Federal Business Development Bank*** *(FBDB) is a constructive resource for the entrepreneurs who start and run them.*

The FBDB, a Crown corporation, promotes small and medium businesses through 84 branches across Canada, mainly with loans and venture capital for companies that cannot get financing through traditional sources. It also provides management training, business counselling, and strategic and financial planning help.

FBDB programs have three features: they respond to real business needs, they are adaptable to local priorities, and they complement services offered by private sector banks. The Bank covers its own costs on lending and venture capital activities.

Canada's small entrepreneurs come to the Bank for many reasons at various stages in their business development, but it is notable that the Bank contributes significantly to female entrepreneurship, new businesses and rural businesses.

Fully one-third of FBDB loans go to firms with 50% or more female ownership, 44% of the Bank's clients are young businesses that have operated for less than five years, and 56% of the Bank's portfolio is invested in businesses in rural communities where financing may be more difficult to obtain. The Bank also responds to the needs of other emerging groups of non-traditional entrepreneurs, such as new Canadians, youth, and native peoples.

Since the FBDB was created in 1945, it has loaned $12 billion to more than 160,000 businesses. In 1990, it authorized loans or guarantees totalling $904 million to 5,600 businesses, and authorized 13 venture capital investments totalling $11,637,000. It also filled some 100,000 requests for business counselling and other services.

Recent studies done by the FBDB show its new loan clients created an average of 8,000 to 10,000 jobs each year during the last half of the 1980s.

The FBDB Venture Capital Division supplies equity financing to small and medium businesses with high growth potential but limited access to private capital. When the FBDB makes investments, it becomes a temporary minority shareholder, divesting itself of shares when the firm is able to get funding elsewhere.

At present, the Bank co-operates in programs with federal government departments and regional development agencies. These include two operated with Employment and Immigration Canada: an FBDB program called ***Community Business Initiatives*** *which provides business training and counselling to entrepreneurs in smaller communities; and the* ***Student Business Loan Program*** *through which students are encouraged to start their own summer businesses, creating jobs for themselves and others.*

Other special services include a financial program for exporting firms; the ***Counselling Assistance to Small Enterprise*** *(CASE) program, in which successful business persons individually counsel entrepreneurs; short-term management training and planning seminars; courses; and locally prepared workshops on specifically identified business training needs.*

In 1990, CASE counsellors took on 10,219 assignments, and there were 20,748 participants in 1,232 management training seminars, and 33,346 participants in 1,225 management workshops.

In addition to face-to-face services, the FBDB publishes do-it-yourself kits on sundry aspects of running a business, a series of informational pocket books, a directory of government programs for business, a handbook on Free Trade, and ***PROFIT$***, *a quarterly newsletter on new business developments. It also sponsors* ***Small Business Week*** *each October, with the Canadian Chamber of Commerce and local business groups.*

Trade-marks registrations last for 15 years and can be renewed for subsequent 15-year periods. Before being registered, proposed trade-marks are advertised in the weekly *Trade-marks Journal*, and can be opposed for 30 days thereafter.

Copyrights may be registered under the provisions of the Copyright Act, and generally last for the life of the creator plus 50 additional years. Industrial designs can be protected for five years, renewable for up to five subsequent years.

Encouraging uniformity The Standards Council of Canada, a Crown corporation, is a national co-ordinating body that promotes voluntary standardization in Canada. The Council encourages the use of standards to advance the economy; benefit the health, safety and welfare of the public; facilitate domestic and international trade; and further international co-operation on standards. To carry out its mandate, the Council created the National Standards System, a federation of organizations with expertise in standards writing, certification and testing. The Council also works with international standards-writing organizations.

FEDERAL GOVERNMENT SERVICES

Industry, Science and Technology Canada Established on February 23, 1990, this department works with the private sector, the science community and other levels of government. It's mandate is to promote international competitiveness and industrial excellence in Canada; to build Canada's scientific, technological, managerial and production base; and to bring together the talents required to safeguard Canada's place in the first rank of industrial nations. The Department is also the chief advocate within government for Canada's business and scientific communities in areas such as taxation and regulation.

The Department achieves its goals by supporting strategic technologies, helping increase sector competitiveness and providing business information and development services.

Federal Business Development Bank This Crown corporation's role is to promote the establishment and development of business in Canada, especially small and medium-sized businesses, by providing loans, guarantees and venture capital. The Bank also offers extensive management counselling, training and planning services.

The Bank publishes a handbook, *Assistance to Business in Canada*, which lists federal assistance programs by department or agency, and has a supplement on the assistance programs of the provinces and territories.

PROVINCIAL SERVICES

While federal government efforts to encourage and assist business have a national focus, each province has its own policies and programs. Common objectives of these programs are regional development and job creation. In most provinces, several agencies work in partnership with business to accomplish these aims.

Some provincial programs focus on market development within the province, in Canada or internationally. Many programs encourage the introduction of new technology, while others focus on helping businesses create innovative products. Some provinces offer businesses tax incentives or reduced rent in industrial malls, industrial parks and "incubator malls". Financial assistance, accompanied by services such as consultation and market information, is available in all provinces. Some provinces have special agencies or banks willing to take an equity position in new ventures or expansions.

18.8 REGULATIONS

Consumer and Corporate Affairs Canada (CCAC) administers broad legislation affecting the marketplace. The Department has four branches: consumer policy and services, legal metrology, consumer products, and product safety. The Department's policies and programs benefit both consumers and the business community by helping to create a fair and competitive marketplace.

TRADE STANDARDS AND REGULATIONS

The Hazardous Products Act regulates household, garden and personal-use products, as well as those used by children or in sports and recreational activities. The Act also covers poisonous, toxic, flammable, explosive and corrosive products. The Minister of Consumer and Corporate

TOY MANUFACTURING

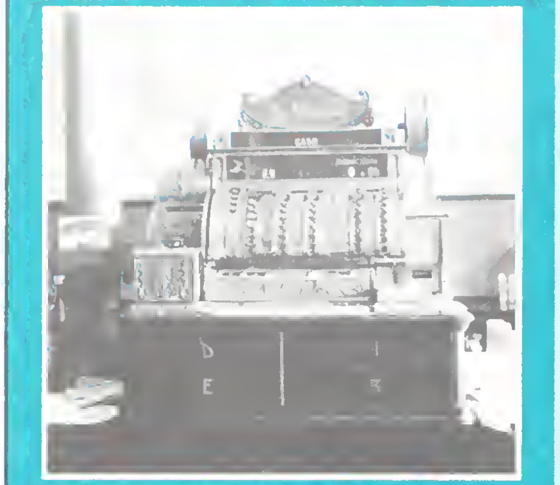
Toy stores offer children an often bewildering array of toys but in Canada's early years, choices were more limited.

Partly, this had to do with the size of the industry. In 1891, there were only two toy factories and the production value of their output was about $3,000.

By 1986, however, the toy industry was no longer kidstuff; there were 70 manufacturing firms producing nearly $155 million of toys.

Clifford H. Bastla/National Archives of Canada/PA 122702

Play time, circa 1913.



W.J. Topley/National Archives of Canada/PA-42378

Turn-of-the-century cash register.

THE GST

Canada recently underwent sales tax reform with the implementation of the Goods and Services Tax (GST). Introduced by the federal government on Jan. 1, 1991, at a rate of 7%, the GST is levied on the personal consumption of almost everything consumers buy — from haircuts and utilities to cars and stereos.

The GST applies to most goods and services sold in Canada with a few exceptions. These include basic groceries, most health and dental services, most educational services, residential rents, most financial services and day care services.

The GST replaced the federal sales tax (FST) — which was introduced in 1924 and applied to a narrow base of mostly manufactured items, generally at a rate of 13.5%.

The FST was seen as having many shortcomings and the GST was designed to address them. Some arguments for disposing of the FST are that it was archaic and inefficient, its tax base was too small, it was being avoided by many businesses, and it discriminated against Canadian producers in favour of importers.

Businesses — including self-employed individuals, corporations and partnerships — collect the GST and remit it to the federal government.

The GST is similar to the retail sales taxes collected by most of the provinces. However, the two types of taxes differ in the way they are collected. Single-stage retail taxes apply when a good or service is sold to the consumer; in contrast, the multi-stage GST applies to all stages of the production and distribution chain.

Because the GST is a tax on personal consumption, the end consumer pays the tax. (Businesses, however, can recover all the GST paid through a special tax credit, preventing tax being paid on tax).

A simplified example of how the GST works can be made in the case of the production and sale of a refrigerator. The 7% GST applies to the price of the iron ore sold by the mining company to the steel maker. When the steel made from the ore is sold to the appliance manufacturer, GST applies again. Similarly, the GST applies when the appliance maker sells the refrigerator to the wholesaler, when the wholesaler sells it to the retailer and, finally, when the retailer sells it to the consumer. Because the GST is a tax on personal consumption, consumers bear the full burden of the tax.

For the government, some benefits of the multi-stage GST are that it is less susceptible to avoidance or evasion and the broad tax base provides a more reliable source of revenue.

While the coverage of the GST is much wider than the FST, the government says replacement of the FST with the GST has benefits for consumers and businesses. The clear advantage to businesses is that they can recover all GST paid on goods and services purchased for commercial purposes. As well, Canadian producers and importers are affected equally by the GST. An advantage for consumers is that the GST is not a "hidden tax" like the FST — applied at the manufacturing stage of production and consequently buried in the retail price. The visibility of the GST, it is argued, should increase the government's accountability to the public when increasing taxes.

To help lower- and modest-income Canadians afford the tax, the government introduced the GST Credit — a tax credit paid in instalments four times a year to more than eight million families and individuals.

The GST applies only to domestic sales, not exports. Status Indians are exempt from paying the GST on goods and services purchased on or delivered to a reserve; and foreign visitors can claim GST rebates on hotel accommodations and goods they take home.

Several provincial governments have indicated they will harmonize their retail taxes with the GST. Such harmonization will expand greatly the scope of provincial sales taxes.

Affairs is empowered to establish mandatory standards; these have included a ban on the use of small parts in infants' toys, flammability standards for children's sleepwear and mandatory warning labels on dangerous chemicals. Rigid specifications cover such products as strollers, playpens, rattles and cribs, as well as hockey helmets, glazed ceramics and cellulose insulation.

The Consumer Packaging and Labelling Act is designed to give uniformity to packaging and labelling practices in Canada, reduce the possibilities of fraud and deception in packaging and labelling, and limit the number of package sizes. The Act is just one of several pieces of legislation that regulate the quality, quantity, composition, packaging, labelling and advertising of food products in Canada.

The Textile Labelling Act requires all consumer textiles to have labels identifying the dealer and the percentages of all fibres used in the product. The Act also covers misrepresentation in labelling and advertising. Other systems have been adopted voluntarily for textiles, including the textile care labelling system and the standard size system for children's garments. The latter is administered under the National Trade Mark and True Labelling Act.

The marking of articles made from precious metals is covered by the Precious Metals Marking Act.

Competition legislation The 1986 Competition Act was designed to encourage competition in Canada. Strong competition promotes economic efficiency and adaptability, expands opportunities for Canadian firms in world markets, ensures that small and medium-sized businesses have an equitable opportunity to participate in the Canadian economy, and ensures competitive prices and product choices for consumers. The Act prohibits price maintenance, predatory pricing, misleading advertising and agreements that unduly lessen competition. It also covers tied selling, delivered pricing, abuses of a dominant position, mergers and specialization agreements.

Measurement Supported by a number of pieces of legislation, CCAC's Legal Metrology Branch minimizes inaccurate measurement and ensures equity in the trade of commodities and services. Measurement control is accomplished by defining units of measure, calibrating and certifying standards, inspecting and approving new trade devices for compliance with regulations, and verifying approved devices before they are used.

Sources

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Standards Council of Canada.
Statistics Canada.

FOR FURTHER READING

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- *Capacity Utilization Rates in Canadian Manufacturing*, quarterly, 31-003.
- *Manufacturing Industries of Canada, National and Provincial areas*, annual, 31-203.
- *Manufacturing Industries of Canada, Sub-provincial Areas*, annual, 31-209.
- *Products Shipped by Canadian Manufacturers*, annual, 31-211.
- *Domestic and Foreign Control of Manufacturing, Mining and Logging Establishments in Canada*, biennial, 31-401.
- *Industrial Organization and Concentration in the Manufacturing, Mining and Logging Industries*, biennial, 31-402.
- *New Motor Vehicle Sales*, monthly, 63-007.
- *The Control and Sale of Alcoholic Beverages in Canada*, annual, 63-202
- *Retail Chain and Department Stores*, annual, 63-210.
- *Direct Selling in Canada*, annual, 63-218.
- *Computer Service Industry*, annual, 63-222.
- *Market Research Handbook*, annual, 63-224.
- *Wholesale Trade Statistics, Wholesale Merchants, Agents and Brokers*, annual, 63-226.
- *Selected Service Industries in Canada*, annual, 63-231. Discontinued, last issue 1985.

TABLES

LEGEND

. .	*not available*	*e*	*estimate*
. . .	*not appropriate or not applicable*	*p*	*preliminary*
—	*nil or zero*	*r*	*revised*
- -	*too small to be expressed*		

(Certain tables may not add due to rounding.)

18.1 VALUE OF SHIPMENTS OF GOODS OF OWN MANUFACTURE, BY PROVINCE, 1984-88[1] (MILLION DOLLARS)

Province or territory	1984	1985	1986	1987	1988
Newfoundland	1,170.3	1,223.8	1,423.7	1,655.1	1,726.0
Prince Edward Island	289.0	296.9	325.8	362.5	391.7
Nova Scotia	4,595.4	4,634.8	4,650.0	4,745.6	5,455.7
New Brunswick	4,092.3	4,243.0	4,909.3	5,634.7	5,627.7
Quebec	57,149.3	60,717.5	61,101.3	66,511.9	73,750.6
Ontario	121,726.4	131,955.2r	136,847.6	143,411.9	157,540.2
Manitoba	5,036.1	5,549.3	5,649.4	6,248.1	6,671.0
Saskatchewan	2,851.6	2,982.9	3,058.9	3,285.9	3,380.1
Alberta	15,288.0	17,191.9	15,175.4	16,421.8	18,100.5
British Columbia	17,979.1	19,863.4	20,224.3	23,368.9	25,510.1
Yukon and Northwest Territories	51.3	58.8	45.1	55.5	57.0
Canada	230,228.9	248,717.5r	253,410.6	271,701.9	298,210.5

[1] *Statistics for the years 1970-82 were compiled on the basis of the 1970 Standard Industrial Classification (SIC), while those for 1983 and subsequent years were compiled on the basis of the 1980 Standard Industrial Classification. To ascertain the impact of this classification change, the reader is referred to the data for the year 1982 in Table 18.4, which is shown on the basis of both 1970 and 1980 classification. The number of major industry groups under the 1980 SIC has increased from 20 to 22 with conceptual changes in the content of a few of these groups.*

18.2 VALUE OF SHIPMENTS OF GOODS OF OWN MANUFACTURE, BY INDUSTRY GROUP, 1984-88[1] (MILLION DOLLARS)

Industry group	1984	1986	1987	1988
Food industries	31,624.2	34,143.6	36,042.3	37,159.5
Beverage industries	4,551.0	5,045.1	5,323.6	5,865.4
Tobacco products industries	1,590.2	1,623.2	1,706.8	1,778.6
Rubber products industries	2,507.2	2,643.6	2,509.7	2,694.7
Plastic products industries	3,510.4	4,384.7	5,063.1	5,893.1
Leather and allied products industries	1,270.5	1,324.8	1,316.1	1,293.3
Primary textile industries	2,729.3	2,957.5	3,123.4	3,173.3
Textile products industries	2,523.0	2,893.0	3,253.0	3,411.0
Clothing industries	5,174.9	6,015.6	6,457.4	6,656.7
Wood industries	9,972.5	12,432.6	14,611.0	15,322.2
Furniture and fixture industries	3,021.5	4,012.0	4,389.5	4,619.7
Paper and allied products industries	17,471.9	20,066.7	23,073.1	25,661.1
Printing, publishing and allied industries	8,659.4	10,370.8	11,180.4	12,525.7
Primary metal industries	16,431.5	17,109.0	19,153.7	22,715.4
Fabricated metal products industries	12,193.1	15,024.3	16,825.1	18,055.8
Machinery industries	6,863.2	8,099.0	8,724.8	10,012.3
Transportation equipment industries	37,916.3	44,399.8	43,332.6	51,718.1
Electrical and electronic products industries	11,790.9	14,304.0	15,831.1	18,191.7
Non-metallic mineral products industries	5,246.4	6,632.0	7,444.4	7,803.6
Refined petroleum and coal products industries	23,336.8	15,756.4	16,438.9	14,938.9
Chemical and chemical products industries	17,174.9	18,639.2	20,267.1	22,628.0
Other manufacturing industries	4,669.8	5,533.5	5,635.1	6,092.3
All manufacturing industries	230,228.9	253,410.6	271,702.2	298,210.5

[1] *See footnote 1, Table 18.1.*

18.3 VALUE OF SHIPMENTS OF GOODS OF OWN MANUFACTURE, BY INDUSTRY GROUP AND PROVINCE, 1988 (MILLION DOLLARS)

Industry group	Province or territory					
	Nfld.	PEI	NS	NB	Que	Ont
Food industries	799.7	266.0	1,265.1	1,127.8	9,207.0	14,826.1
Beverage industries	[1]	[1]	144.8	173.0	1,527.6	2,708.1
Tobacco products industries	—	—	—	—	[1]	[1]
Rubber products industries	—	—	[1]	[1]	[1]	1,454.9
Plastic products industries	[1]	[1]	64.2	64.0	1,469.5	3,390.0
Leather and allied products industries	[1]	—	0.5	[1]	533.9	641.4
Primary textile industries	—	[1]	[1]	[1]	1,687.5	1,338.5
Textile products industries	[1]	[1]	100.1	[1]	1,629.1	1,460.0
Clothing industries	[1]	[1]	49.9	15.7	4,062.1	1,812.3
Wood industries	29.2	14.1	159.8	497.6	3,613.5	2,906.0
Furniture and fixture industries	0.9	—	18.8	20.7	1,438.4	2,571.4
Paper and allied products industries	[1]	[1]	661.8	1,643.5	8,122.6	7,906.4
Printing, publishing and allied industries	45.1	16.5	146.1	96.3	3,315.0	6,638.0
Primary metal industries	[1]	—	[1]	[1]	7,465.6	11,903.4
Fabricated metal products industries	25.0	13.5	113.2	183.5	4,085.7	10,948.1
Machinery industries	1.7	11.5	39.4	69.8	1,667.6	6,162.4
Transportation equipment industries	[1]	18.5	368.4	[1]	6,302.5	42,304.7
Electrical and electronic products industries	[1]	[1]	119.0	50.7	4,843.4	11,707.7
Non-metallic mineral products industries	51.6	4.4	105.2	108.5	1,837.5	4,159.2
Refined petroleum and coal products industries	[1]	—	[1]	[1]	2,700.2	5,376.2
Chemical and chemical products industries	90.5	22.4	58.3	103.1	5,132.6	12,571.0
Other manufacturing industries	4.1	6.1	[1]	[1]	[1]	[1]
All manufacturing industries	1,726.0	391.7	5,455.7	5,627.7	73,750.6	157,540.2
	Man.	Sask.	Alta.	BC	YT and NWT	Canada[2]
Food industries	1,640.3	985.8	4,113.1	2,928.6	—	37,159.5
Beverage industries	174.4	117.9	417.5	471.5	—	5,865.4
Tobacco products industries	—	—	—	—	—	1,778.6
Rubber products industries	[1]	[1]	[1]	[1]	—	2,694.7
Plastic products industries	184.9	47.4	289.6	371.4	—	5,893.1
Leather and allied products industries	40.9	6.0	23.3	[1]	—	1,293.3
Primary textile industries	[1]	—	[1]	20.3	—	3,173.3
Textile products industries	53.0	12.5	65.6	82.5	—	3,411.0
Clothing industries	338.2	15.0	140.0	221.6	—	6,656.7
Wood industries	220.5	151.9	797.7	6,931.9	—	15,322.2
Furniture and fixture industries	153.8	10.6	217.4	187.8	—	4,619.7
Paper and allied products industries	322.9	[1]	631.0	5,728.1	—	25,661.1
Printing, publishing and allied industries	452.2	203.4	733.9	879.4	—	12,525.7
Primary metal industries	512.4	[1]	1,089.7	1,241.9	—	22,715.4
Fabricated metal products industries	428.9	145.9	954.9	1,156.8	—	18,055.8
Machinery industries	430.7	175.7	761.4	692.3	—	10,012.3
Transportation equipment industries	652.7	98.8	227.5	972.1	—	51,718.1
Electrical and electronic products industries	514.7	184.6	344.3	407.3	—	18,191.7
Non-metallic mineral products industries	199.4	99.5	629.7	608.5	—	7,803.6
Refined petroleum and coal products industries	[1]	[1]	2,876.4	1,473.5	[1]	14,938.9
Chemical and chemical products industries	229.1	164.0	3,442.6	814.6	—	22,628.0
Other manufacturing industries	76.9	28.0	229.9	259.1	[1]	6,092.3
All manufacturing industries	6,671.0	3,380.1	18,100.5	25,510.1	57.0	298,210.5

[1] *Confidential.*

[2] *See footnote 1, Table 18.1.*

18.4 SUMMARY STATISTICS, ANNUAL CENSUS OF MANUFACTURERS, 1977-88[1]

Year	Establishments No.	Manufacturing activity						
		Production and related workers			Cost of fuel and electricity[2,3] $'000	Cost of materials and supplies used $'000	Value of shipments of goods and of own manufacture $'000	Value added $'000
		Number	Person-hours paid '000	Wages $'000				
1977	27,716	1,242,103	2,577,429	15,814,667	2,790,351	63,015,412	108,881,959	44,104,548
1978[4]	31,963	1,310,293	2,720,935	17,928,190	3,397,375	74,919,990	128,889,376	51,523,349
1979[5]	34,578	1,360,883	2,834,642	20,376,979	3,879,624	90,270,324	152,133,081	60,623,169
1980	35,495	1,346,187	2,780,203	22,162,309	4,448,859	99,897,576	168,058,662	65,851,774
1981	35,780	1,337,433	2,755,669	24,539,352	5,468,509	114,283,081	191,029,704	74,050,661
1982	35,834	1,212,424	2,473,214	24,261,593	6,028,226	111,971,399	187,932,882	69,052,759
1982[6]	34,121	1,205,859	2,460,189	24,180,897	6,020,309	111,834,089	187,710,349	68,988,161
1983	35,287	1,193,912	2,455,229	25,763,545	6,637,059	119,759,106	203,366,412	76,895,569
1984	36,464	1,240,816	2,583,486	28,294,557	7,256,843	136,122,271	230,228,931	88,732,913
1985	36,854	1,305,159	2,734,519	31,072,594	7,408,353	145,790,922r	248,717,511r	95,880,165
1986	38,380	1,351,563	2,852,525	33,081,693	6,999,645	146,336,148	253,410,556	102,459,302
1987	36,790	..	..	..	7,052,909	152,487,615	271,701,852	112,641,123
1988	40,262	1,474,738	3,089,681	38,890,576	7,362,810	166,534,406	398,210,479	125,175,167

Year	Establishments No.	Total activity						
		Working owners and partners		Total employees[7]		Cost of materials and supplies used and goods purchased for resale[8] $'000	Value of shipments and other revenue[9] $'000	Value added[10] $'000
		Number	Withdrawals '000	Number	Salaries and wages $'000			
1977	27,716	4,859	..	1,704,583	23,595,238	77,761,372	126,324,545	46,801,174
1978[4]	31,963	6,008	..	1,790,618	26,571,596	91,866,286	148,742,898	54,430,575
1979[5]	34,578	6,574	..	1,855,393	30,112,290	110,772,016	176,352,327	64,340,724
1980	35,495	6,385	..	1,850,436	33,133,061	121,105,853	193,310,632	69,895,467
1981	35,780	5,930	..	1,853,968	37,106,195	137,410,611	218,550,416	78,443,843
1982	35,834	5,405	..	1,709,418	37,712,333	134,108,948	214,429,419	73,411,747
1982[6]	34,121	4,342	..	1,702,303	37,624,733	133,965,324	214,201,297	73,347,874
1983	35,287	4,539	..	1,671,140	39,609,111	143,453,528	231,884,329	81,719,064
1984	36,464	4,711	..	1,722,045	43,076,019	164,912,102	264,395,795	94,109,946
1985	36,854	..	..	1,766,763	46,208,030	179,244,505r	287,654,289r	101,363,360r
1986	38,380	..	..	1,808,716	48,749,085	178,740,310	293,937,278	107,581,862
1987	36,790	..		1,863,507	51,819,089	189,145,595	314,074,337	118,355,628
1988	40,262			1,947,090	56,794,988	205,772,487	344,906,539	132,633,146

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[1] *Statistics for the years 1970-82 were compiled on the basis of the 1970 edition of the Standard Industrial Classification (SIC), while data for the 1982 (restated) and subsequent years have been compiled on the basis of the 1980 revision of the Standard Industrial Classification. Thus 1982 is a "link year" to which the reader may refer to measure the impact of the change in classification on the various manufacturing statistics.*

[2] *Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.*

[3] *From 1970-81 inclusive, the cost of fuel and electricity was not collected separately for small firms and was included in the cost of materials and supplies used.*

[4] *Some 3,820 establishments with manufacturing shipments of $2,257 million were added to the census in 1978 as a result of improved coverage, mostly of small establishments.*

[5] *Some 1,142 establishments with manufacturing shipments of $557 million were added to the census in 1979 as a result of improved coverage, mostly of small establishments.*

[6] *Data for 1982 restated to the 1980 revision of the Standard Industrial Classification.*

[7] *Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.*

[8] *Includes supplies used in both manufacturing and non-manufacturing activity.*

[9] *Includes shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenue.*

[10] *Value of total operational revenue less total costs of materials, supplies, fuel and electricity used and goods purchased for resale in the same condition; all adjusted for inventory changes where required.*

18.5 ESTABLISHMENTS IN MANUFACTURING INDUSTRIES, BY INDUSTRY GROUP AND NUMBER EMPLOYED, 1988[1]

Industry group	Establishments with total employment of									
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1.000 or over	Total
Food industries	653	496	580	708	419	255	164	31	7	3,313
Beverage industries	40	20	34	76	47	38	25	3	4	287
Tobacco products industries	3	2	1	3	3	1	3	3	—	19
Rubber products industries	30	25	26	34	23	16	14	9	5	182
Plastic products industries	244	181	218	303	196	80	34	1	—	1,257
Leather and allied products industries	86	49	51	64	48	52	17	1	1	369
Primary textile industries	26	18	23	46	31	37	27	7	1	216
Textile products industries	247	183	172	192	98	57	32	3	—	984
Clothing industries	584	459	466	694	334	192	77	13	—	2,819
Wood industries	1,081	627	637	669	305	201	111	8	—	3,639
Furniture and fixture industries	604	355	290	350	199	100	43	5	1	1,947
Paper and allied products industries	69	55	70	154	115	106	79	50	20	718
Printing, publishing and allied industries	2,271	1.293	821	710	274	160	66	15	8	5,618
Primary metal industries	78	42	56	105	62	63	56	21	18	501
Fabricated metal products industries	1,698	1,142	1,136	1,156	555	224	79	12	2	6,004
Machinery industries	416	333	375	584	284	120	57	12	1	2,182
Transportation equipment industries	372	227	220	303	176	158	132	54	32	1,674
Electrical and electronic products industries	349	225	244	309	208	128	112	40	16	1,631
Non-metallic mineral products industries	373	344	314	340	175	76	34	6	1	1,663
Refined petroleum and coal products industries	41	17	20	25	10	10	15	2	1	141
Chemical and chemical products industries	320	227	243	275	169	97	85	20	2	1,438
Other manufacturing industries	1,581	766	525	472	189	83	40	1	3	3,660

[1] *See footnote 1, table 18.1.*

18.6 NUMBER OF EMPLOYEES BY INDUSTRY GROUP AND PROVINCE, 1988

Industry group	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.[2]
Food industries	12,140	2,252	11,821	9,502	47,240	76,317
Beverage industries	[1]	[1]	999	853	10,391	11,920
Tobacco products industries	—	—	—	—	[1]	[1]
Rubber products industries	—	—	[1]	[1]	[1]	14,239
Plastic products industries	[1]	[1]	601	396	12,778	29,748
Leather and allied products industries	[1]	—	11	[1]	7,987	10,957
Primary textile industries	—	[1]	[1]	[1]	13,125	10,458
Textile products industries	[1]	[1]	1,234	[1]	16,849	15,325
Clothing industries	[1]	[1]	999	733	64,669	34,549
Wood industries	478	272	2,235	4,620	34,149	29,185
Furniture and fixture industries	32	—	304	290	20,683	33,284
Paper and allied products industries	[1]	[1]	3,425	6,291	43,203	42,794
Printing, publishing and allied industries	655	207	2,183	1,483	33,074	68,842
Primary metal industries	[1]	—	[1]	[1]	28,045	63,704
Fabricated metal products industries	342	201	1,401	1,549	40,109	99,652
Machinery industries	35	113	826	814	17,427	52,027
Transportation equipment industries	[1]	217	3,117	[1]	41,020	165,869
Electrical and electronic products industries	[1]	[1]	1,542	449	39,265	94,395
Non-metallic mineral products industries	528	38	872	994	14,620	29,354
Refined petroleum and coal products industries	[1]	—	[1]	[1]	1,732	7,635
Chemical and chemical products industries	369	122	471	416	25,180	56,679
Other manufacturing industries	111	142	[1]	[1]	[1]	[1]
All manufacturing industries	19,177	3,755	39,928	34,508	539,927	992,676

Industry group	Man.	Sask.	Alta.	BC	YT and NWT	Canada[2]
Food industries	8,109	3,942	12,677	16,570	—	200,570
Beverage industries	1,117	857	2,017	2,660	—	31,486
Tobacco products industries	93	—	—	122	—	5,501
Rubber products industries	[1]	[1]	[1]	[1]	—	26,179
Plastic products industries	1,587	253	2,028	3,032	—	50,538
Leather and allied products industries	436	74	264	[1]	—	20,298
Primary textile industries	[1]	—	[1]	270	—	24,825
Textile products industries	844	107	1,037	1,484	—	37,065
Clothing industries	7,487	408	1,849	4,730	—	115,485
Wood industries	2,474	1,445	6,793	42,283	—	123,934
Furniture and fixture industries	2,184	182	2,850	2,564	—	62,373
Paper and allied products industries	1,755	[1]	2,479	18,207	—	121,075
Printing, publishing and allied industries	5,545	2,939	9,057	9,778	—	133,763
Primary metal industries	2,539	[1]	3,734	7,318	—	108,674
Fabricated metal products industries	4,466	1,597	9,471	10,116	—	168,904
Machinery industries	3,808	2,015	7,522	6,668	—	91,255
Transportation equipment industries	6,750	896	3,031	7,206	—	232,735
Electrical and electronic products industries	3,511	1,373	4,157	5,545	—	150,460
Non-metallic mineral products industries	1,533	1,000	4,473	4,425	—	57,837
Refined petroleum and coal products industries	[1]	[1]	3,398	979	[1]	15,610
Chemical and chemical products industries	1,166	542	5,624	3,291	—	93,860
Other manufacturing industries	1,431	502	3,732	4,196	[1]	74,663
All manufacturing industries	57,210	20,452	86,811	152,257	295	1,947,090

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[1] *Confidential.*

[2] *See footnote 1, Table 18.1.*

18.7 BUSINESSES AND REVENUES FOR LEISURE AND PERSONAL SERVICE INDUSTRIES, 1986-88

Title and SIC[1] number	1986		1987		1988	
	No.	$'000,000	No.	$'000,000	No.	$'000,000
Motion picture, audio and video production and distribution (SIC 961)	930	1,129.5	876	1,309.9	947	1,636.6
Motion picture exhibition (SIC 962)	897	403.4	821	481.4	790	498.8
Theatrical and other staged entertainment services (SIC 963)	2,420	420.3	4,514	524.3	6,135	703.8
Commercial spectator sports (SIC 964)	979	529.8	1,131	559.6	1,345	633.7
Sports and recreation clubs and services (SIC 965)	2,879	962.6	2,753	1,060.8	3,631	1,251.6
Other amusement and recreational services (SIC 969)	4,337	799.3	3,718	834.2	4,644	955.2
Barber and beauty shops (SIC 971)	12,334	1,174.9	12,243	1,194.6	14,934	1,451.6
Laundries and cleaners (SIC 972)	5,240	1,192.3	4,427	1,199.1	5,816	1,377.8
Funeral services (SIC 973)	1,389	588.3	1,237	641.7	1,309	720.4
Other personal and household services (SIC 979)	3,813	485.4	4,328	526.4	5,947	678.2

[1] *Standard Industrial Classification, 1980.*

18.8 RECEIPTS OF FOOD AND BEVERAGE SERVICE INDUSTRIES, BY PROVINCE, 1989 (MILLION DOLLARS)

Province	Restaurants, licensed	Restaurants, unlicensed	Take-out food services	Caterers	Taverns, bars and night clubs	Total
Newfoundland	37.1	37.8	49.9	18.2	43.1	186.1
Prince Edward Island	26.0	19.1	11.2	2.6	5.8	64.6
Nova Scotia	122.4	134.7	81.1	37.5	50.7	426.4
New Brunswick	59.5	102.9	85.7	30.3	30.0	308.5
Quebec	1,796.6	1,238.7	381.6	325.2	493.5	4,235.7
Ontario	3,288.4	1,868.0	1,154.7	723.5	313.0	7,347.7
Manitoba	154.4	212.9	60.4	43.9	22.5	494.1
Saskatchewan	161.8	207.1	42.9	21.5	9.1	442.4
Alberta	828.0	461.3	157.5	123.1	24.8	1,594.8
British Columbia	1,033.6	576.3	175.9	205.7	175.5	2,167.0
Yukon and Northwest Territories	16.9	9.1	3.1	8.0	2.9	39.8
Canada	7,524.7	4,867.9	2,204.0	1,539.5	1,170.9	17,307.1

18.9 REVENUES OF ACCOMMODATION SERVICE INDUSTRIES, BY PROVINCE, 1987 (MILLION DOLLARS)

Province	Hotels and motor hotels	Motels	Camping grounds and travel trailer parks	Recreation and vacation camps	Tourist courts, cabins, guest houses, tourist homes, lodging houses and residential clubs	Total
Newfoundland	58.3	21.6	[1]	[1]	3.2	85.2
Prince Edward Island	22.1	12.9	1.7	—	1.5	38.2
Nova Scotia	95.4	35.6	6.2	[1]	[1]	141.0
New Brunswick	85.9	32.8	2.8	3.3	1.3	126.1
Quebec	849.5	179.6	27.3	42.1	40.0	1,138.5
Ontario	1,705.6	301.4	73.7	107.5	82.2	2,270.4
Manitoba	381.8	19.7	4.9	12.4	11.0	429.8
Saskatchewan	300.4	49.8	7.4	14.7	4.5	376.7
Alberta	876.5	94.8	14.3	8.5	9.4	1,003.4
British Columbia	972.6	154.4	39.1	39.9	24.0	1,230.0
Yukon	37.9	6.7	4.1	3.6	2.6	54.8
Northwest Territories	40.0	4.7	[1]	3.4	[1]	50.9
Canada	5,426.1	913.7	183.3	237.0	184.9	6,945.0

[1] *Confidential.*

18.10 BUSINESSES AND REVENUES FOR LEISURE AND PERSONAL SERVICE INDUSTRIES, 1986-88

Title and SIC[1] number	1986		1987		1988	
	No.	$'000,000	No.	$'000,000	No.	$'000,000
Employment agencies and personnel suppliers (SIC 771)	1,637	1,186.0	2,000	1,422.9	2,223	1,812.2
Computer and related services (SIC 772)	5,276	3,467.3	6,913	3,879.5	9,468	4,726.4
Advertising services (SIC 774)	4,712	1,871.6	6,471	2,092.9	7,900	2,730.9
Architectural, engineering and other scientific and technical services (SIC 775)	11,706	5,574.6	11,901	6,489.0	16,009	8,444.2
Other business services (SIC 779)	24,052	4,873.3	23,353	5,242.6	34,241	7,049.2
Machinery and equipment rental and leasing services (SIC 991)	6,565	1,850.7	5,803	2,087.5	7,649	2,647.4
Automobile and truck rental and leasing services (SIC 992)	2,480	2,061.1	2,409	2,308.6	3,088	2,762.1
Photographers (SIC 993)	2,359	375.1	2,397	403.4	2,969	474.3
Other repair services (SIC 994)	6,235	963.9	6,364	1,068.6	7,882	1,397.2
Services to buildings and dwellings (SIC 995)	8,839	1,534.1	9,113	1,654.8	12,373	2,084.6
Travel services (SIC 996)	3,714	2,899.9	3,398	3,126.7	4,271	3,799.5

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[1] *Standard Industrial Classification, 1980.*

18.11 WHOLESALE MERCHANT ESTABLISHMENTS, VOLUME OF TRADE[1], BY TRADE GROUP, 1984-87 (MILLION DOLLARS)

Province or territory and SIC trade group	1984	1985	1986	1987
Newfoundland	1,544.8	1,673.9	1,531.0	1,671.2
Prince Edward Island	264.4	294.6	321.8	335.5
Nova Scotia	2,352.7	2,304.4	2,363.0	2,977.1
New Brunswick	3,233.6	3,593.9	3,571.7	3,898.0
Quebec	39,143.7	41,407.8	42,405.2	47,156.2
Ontario	72,841.2	81,783.1	87,945.5	99,453.9
Manitoba	19,293.6	17,860.3	16,708.8	14,928.2
Saskatchewan	7,210.1	7,526.9	6,973.5	7,240.0
Alberta	16,766.3	18,720.7	17,248.3	19,263.3
British Columbia	18,816.2	19,970.3	20,402.7	22,947.4
Yukon and Northwest Territories	174.1	169.4	150.6	137.0
Farm products	19,730.8	17,347.1	15,584.6	16,097.4
Coal, coke and petroleum products	27,917.8	29,807.8	23,191.9	25,236.4
Paper and paper products	3,835.9	4,161.4	4,075.4	4,661.2
General merchandise	[2]	[2]	[2]	[2]
Food	28,768.6	31,291.6	33,291.1	35,935.9
Tobacco products, drugs and toilet preparations	5,052.1	5,845.9	6,598.1	7,080.9
Apparel and dry goods	3,305.9	3,963.1	4,659.5	5,044.1
Household furniture and house furnishings	1,980.4	1,967.8	23,557.7	2,612.2
Motor vehicles and accessories	13,543.2	16,134.1	17,135.7	19,349.0
Electrical machinery, equipment and supplies	12,412.5	13,489.7	15,716.2	17,572.9
Farm machinery	4,990.3	5,348.6	5,466.8	5,209.2
Machinery and equipment	16,464.7	18,771.9	19,438.2	21,690.5
Hardware, plumbing and heating equipment	5,062.3	5,642.6	6,389.9	7,527.7
Metals and metal products	[2]	[2]	[2]	[2]
Lumber and building materials	12,474.6	13,464.6	15,748.0	18,574.7
Scrap and waste materials	[2]	[2]	[2]	[2]
Wholesalers, n.e.s.	16,742.9	17,467.8	19,105.2	19,275.1
Total, all trades	181,640.8	195,305.2	199,622.1	220,007.8

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[1] *Sales and trading receipts, and the value of goods bought or sold on commission.*

[2] *Confidential*

18.12 AGENTS AND BROKERS, VOLUME OF TRADE[1] BY TRADE GROUP, 1984-87 (MILLION DOLLARS)

Province or territory and SIC trade group	1984	1985	1986	1987
Newfoundland	349.0	287.0	294.2	263.0
Prince Edward Island	42.0	61.0	60.8	54.6
Nova Scotia	485.9	656.3	659.7	640.0
New Brunswick	288.6	266.0	277.5	211.9
Quebec	5,896.0	6,618.8	7,636.4	7,749.7
Ontario	15,480.2	16,136.7	15,195.2	17,219.7
Manitoba	2,363.3	2,376.4	1,813.9	1,829.2
Saskatchewan	1,180.5	1,302.7	1,281.5	1,295.2
Alberta	3,877.3	4,781.4	4,652.6	3,977.2
British Columbia	3,700.4	3,830.4	4,071.3	4,417.4
Yukon and Northwest Territories	59.4	56.2	59.4	69.6
Farm products	7,985.7	8,396.0	8,360.5	8,183.5
Coal, coke and petroleum products	5,026.3	5,306.5	3,902.4	5,965.1
Paper and paper products	366.9	446.9	667.4	729.9
General merchandise	[2]	[2]	[2]	[2]
Food	7,257.2	6,981.1	7,431.2	6,960.9
Tobacco products, drugs and toilet preparations	150.3	218.2	215.9	220.6
Apparel and dry goods	1,669.3	1,966.7	2,315.1	2,047.1
Household furniture and house furnishings	612.3	682.2	934.1	959.2
Motor vehicles and accessories	576.0	1,371.9	1,189.4	1,000.9
Electrical machinery, equipment and supplies	1,615.0	2,239.1	2,184.9	1,901.8
Farm machinery	99.5	67.7	43.7	55.4
Machinery and equipment	518.6	669.6	544.3	677.0
Hardware, plumbing and heating equipment	1,575.2	1,576.3	2,073.8	2,309.6
Metals and metal products	[2]	[2]	[2]	[2]
Lumber and building materials	910.1	1,092.5	1,332.1	1,642.5
Scrap and waste materials	18.1	[2]	[2]	[2]
Wholesalers, n.e.s.	2,053.6	2,037.3	2,131.4	2,272.8
Total, all trades	33,722.6	36,372.8	36,002.5	37,727.3

[1] *Sales and trading receipts including value of goods bought or sold on commission.*

[2] *Confidential.*

18.13 AGENTS AND BROKERS, GROSS COMMISSIONS EARNED BY TRADE GROUP, 1984-87 (MILLION DOLLARS)

Province or territory and SIC trade group	1984	1985	1986	1987
Newfoundland	14.9	14.2	16.1	18.2
Prince Edward Island	4.3	[1]	[1]	[1]
Nova Scotia	23.8	25.7	25.8	24.0
New Brunswick	13.8	[1]	14.2	11.4
Quebec	202.7	261.2	215.7	214.7
Ontario	326.0	383.6	390.5	393.8
Manitoba	93.1	99.3	73.2	72.9
Saskatchewan	42.2	44.1	43.3	40.3
Alberta	109.7	107.5	103.6	[1]
British Columbia	137.4	137.8	158.4	162.4
Yukon and Northwest Territories	2.3	[1]	[1]	[1]

18.13 AGENTS AND BROKERS, GROSS COMMISSIONS EARNED BY TRADE GROUP, 1984-87 (MILLION DOLLARS) (concluded)

Province or territory and SIC trade group	1984	1985	1986	1987
Farm products	165.1	244.3	165.8	152.5
Coal, coke and petroleum products	232.6	232.4	212.1	184.7
Paper and paper products	11.0	15.5	23.2	24.9
General merchandise	[1]	[1]	[1]	[1]
Food	118.2	126.9	136.0	139.5
Tobacco products, drugs and toilet preparations	14.7	15.4	13.4	13.5
Apparel and dry goods	93.3	98.5	112.9	102.5
Household furniture and house furnishings	28.8	29.4	39.8	40.9
Motor vehicles and accessories	24.0	29.7	31.3	34.3
Electrical machinery, equipment and supplies	59.1	69.8	63.9	60.6
Farm machinery	5.1	4.4	2.7	3.2
Machinery and equipment	41.7	49.1	38.8	47.8
Hardware, plumbing and heating equipment	36.2	36.6	54.2	55.2
Metals and metal products	[1]	[1]	[1]	[1]
Lumber and building materials	27.4	33.5	38.1	50.4
Scrap and waste materials	2.0	[1]	[1]	[1]
Wholesalers, n.e.s.	92.2	86.3	95.3	104.3
Total, all trades	970.3	1,090.8	1,045.6	1,038.3

[1] *Confidential.*

18.14 RETAIL TRADE, BY KIND OF BUSINESS, PERCENTAGE AND PERCENTAGE DISTRIBUTION, 1985-88

Kind of business and province or territory	1985 $'000,000	1986 $'000,000	1987 $'000,000	1988 $'000,000	Percentage change 1987-88	Percentage distribution 1988
Kind of business						
Combination stores (groceries and meat)	23,776.7	25,025.9	26,775.1	27,903.6	4.2	16.9
Grocery, confectionery and sundries stores	6,154.8	7,000.9	7,690.9	8,287.8	7.8	5.0
All other food stores	2,325.6	2,602.3	2,805.7	2,996.3	6.8	1.8
Department stores	12,038.6	12,728.5	12,906.0	13,271.1	2.8	8.0
General merchandise stores	2,698.9	2,858.3	3,063.8	3,109.3	1.5	1.9
General stores	1,982.7	2,097.4	2,263.5	2,414.8	6.7	1.5
Variety stores	1,266.9	1,247.0	1,073.6	1,056.9	−1.6	0.6
Motor vehicle dealers	26,026.6	28,687.7	32,248.1	35,917.5	11.4	21.7
Used car dealers	654.9	799.3	1,032.6	1,190.2	15.3	0.7
Service stations	11,100.7	10,762.9	12,276.8	12,732.9	3.7	7.7
Garages	1,484.2	1,544.8	1,699.1	1,879.1	10.6	1.1
Automotive parts and accessories stores	2,801.8	3,068.2	3,440.3	3,766.8	9.5	2.3
Men's clothing stores	1,324.1	1,437.8	1,583.1	1,718.7	8.6	1.0
Women's clothing stores	2,777.2	3,035.6	3,256.4	3,374.2	3.6	2.0
Family clothing stores	1,867.4	2,079.5	2,244.0	2,392.9	6.6	1.4
Specialty shoe stores	212.0	249.6	300.0	315.1	5.0	0.2
Family shoe stores	1,075.8	1,175.3	1,196.4	1,284.0	7.3	0.8
Hardware stores	1,157.6	1,432.4	1,609.9	1,824.0	13.3	1.1
Household furniture stores	1,542.2	1,614.5	1,879.3	2,034.0	8.2	1.2
Household appliance stores	527.4	557.8	634.8	697.0	9.8	0.4
Furniture, TV, radio and appliance stores	1,144.9	1,487.0	1,683.7	1,715.8	1.9	1.0
Pharmacies, patent medicine and cosmetics stores	5,356.6	6,064.4	6,691.5	7,459.1	11.5	4.5
Book and stationery stores	715.4	785.8	896.2	1,018.8	13.7	0.6
Florists	471.5	516.5	581.9	615.3	5.7	0.4
Jewellery stores	932.0	1,042.2	1,136.9	1,215.0	6.9	0.7
Sporting goods and accessories stores	1,868.3	2,029.0	2,342.3	2,668.5	13.9	1.6
Personal accessories stores	1,719.4	2,049.5	2,396.9	2,573.2	7.4	1.6
All other stores	14,442.3	16,028.2	18,024.1	19,758.4	9.6	12.0
Total	129,446.3	140,009.3	153,732.8	165,190.4	7.5	100.0

18.14 RETAIL TRADE, BY KIND OF BUSINESS, PERCENTAGE AND PERCENTAGE DISTRIBUTION, 1985-88 (concluded)

Province or territory	1985 $'000,000	1986 $'000,000	1987 $'000,000	1988 $'000,000	Percentage change 1987-88	Percentage distribution 1988
Newfoundland	2,254.1	2,406.6	2,755.2	3,073.6	11.6	1.9
Prince Edward Island	547.5	577.3	640.6	703.5	9.8	0.4
Nova Scotia	4,579.6	4,796.1	5,225.3	5,606.0	7.3	3.4
New Brunswick	3,171.5	3,482.4	3,794.2	4,119.9	8.6	2.5
Quebec	31,782.3	34,593.2	38,865.4	41,615.5	7.1	25.2
Ontario	49,003.6	53,411.9	59,039.3	63,583.7	7.7	38.5
Manitoba	5,200.8	5,444.4	5,769.5	5,972.2	3.5	3.6
Saskatchewan	4,704.0	4,999.2	5,254.4	5,502.2	4.7	3.3
Alberta	13,523.5	14,338.4	14,855.3	15,953.8	7.4	9.7
British Columbia	14,303.6	15,567.0	17,116.5	18,608.9	8.7	11.3
Yukon and Northwest Territories	375.8	392.8	416.7	451.1	8.2	0.3

18.15 SALES OF CHAIN AND INDEPENDENT STORES, BY KIND OF BUSINESS, 1987 AND 1988

Kind of business	Chain stores			Independent stores		
	1987 $'000,000	1988 $'000,000	Percentage change 1987-88	1987 $'000,000	1988 $'000,000	Percentage change 1987-88
Combination stores (groceries and meat)	17,282.3	17,980.9	4.0	9,492.8	9,922.6	4.5
Grocery, confectionery and sundries stores	2,130.6	2,126.7	−0.2	5,560.2	6,161.1	10.8
All other food stores	290.8	316.7	8.9	2,514.9	2,679.5	6.5
Department stores	12,906.0	13,271.1	2.8	—	—	—
General merchandise stores	2,275.6	2,330.1	2.4	788.2	779.2	−1.1
General stores	945.2	1,014.1	7.3	1,318.3	1,400.7	6.2
Variety stores	915.2	907.5	−0.8	158.4	149.4	−5.7
Motor vehicle dealers	411.4	442.9	7.7	31,836.7	35,474.6	11.4
Used car dealers	—	—	—	1,032.6	1,190.2	15.3
Service stations	3,528.3	3,691.3	4.6	8,748.4	9,041.6	3.4
Garages	[1]	[1]	[1]	[1]	[1]	[1]
Automotive parts and accessories stores	218.8	237.2	8.4	3,221.6	3,529.7	9.6
Men's clothing stores	885.4	979.0	10.6	697.7	739.8	6.0
Women's clothing stores	2,191.2	2,277.9	4.0	1,065.1	1,096.3	2.9
Family clothing stores	1,586.3	1,692.0	6.7	657.7	700.8	6.6
Specialty shoe stores	178.4	182.8	2.5	121.6	132.3	8.8
Family shoe stores	869.2	933.3	7.4	327.2	350.6	7.2
Hardware stores	267.9	284.9	6.3	1,342.1	1,539.1	14.7
Household furniture stores	457.0	483.2	5.7	1,422.3	1,550.8	9.0
Household appliance stores	85.0	70.0	−17.6	549.8	627.0	14.0
Furniture, TV, radio and appliance stores	916.2	975.6	6.5	767.5	740.2	−3.6
Pharmacies, patent medicine and cosmetics stores	2,001.5	2,274.3	13.6	4,690.0	5,184.8	10.6
Book and stationery stores	450.6	508.3	12.8	445.5	510.5	14.6
Florists	[1]	[1]	[1]	[1]	[1]	[1]
Jewellery stores	538.1	573.6	6.6	598.7	641.4	7.1
Sporting goods and accessories stores	502.6	568.4	13.1	1,839.7	2,100.1	14.2
Personal accessories stores	949.0	1,069.1	12.6	1,447.9	1,504.0	3.9
All other stores	9,249.9	9,793.0	5.9	8,774.2	9,965.5	13.6
Total	62,067.8	65,020.7	4.8	91,665.0	100,169.7	9.3

[1] *Confidential.*

18.16 RETAIL SALES OF NEW MOTOR VEHICLES BY TYPE AND SOURCE, 1978-88

Year	Passenger cars		Trucks and buses		Total	
	Canadian/US	Overseas	Canadian/US	Overseas	Canadian/US	Overseas
	Number					
1978	815,994	172,896	364,241	13,413	1,180,235	186,309
1979	863,554	139,454	381,562	11,832	1,245,116	151,286
1980	740,767	191,293	310,273	21,474	1,051,040	212,767
1981	646,942	257,253	250,775	35,912	897,717	293,165
1982	489,435	224,046	166,986	40,435	656,421	264,481
1983	625,088	218,230	192,609	45,161	817,697	263,391
1984	724,932	246,278	273,604	38,688	998,536	284,966
1985	794,965	342,251	344,871	48,323	1,139,836	390,574
1986	761,169	334,144	368,423	52,184	1,129,592	386,328
1987	700,930	364,163	417,189	51,355	1,118,119	415,518
1988	724,733	331,577	459,777	49,414	1,184,510	380,991
	Thousand dollars					
1978	5,381,914	1,001,106	3,188,109	78,396	8,570,023	1,079,502
1979	6,355,127	989,047	4,053,773	84,035	10,408,900	1,073,082
1980	6,069,407	1,448,494	3,698,247	162,456	9,767,654	1,610,950
1981	6,033,437	2,239,092	3,334,406	311,460	9,367,843	2,550,552
1982	4,856,340	2,181,224	2,423,014	363,393	7,279,354	2,544,617
1983	6,700,490	2,340,886	2,728,842	426,108	9,429,332	2,766,994
1984	8,176,591	2,962,340	4,136,482	404,347	12,313,073	3,366,687
1985	9,545,156	4,162,481	5,641,518	540,964	15,186,674	4,703,445
1986	9,856,682	4,813,044	6,441,811	729,994	16,298,493	5,543,038
1987	10,031,339	5,717,071	7,930,141	793,211	17,961,480	6,510,282
1988	11,080,866	5,628,610	9,364,528	786,323	20,450,394	6,414,933

18.17 DEPARTMENT STORE SALES BY DEPARTMENT, 1985-88

Department	1985 $'000,000	1986 $'000,000	1987 $'000,000	1988 $'000,000	Percentage change 1987-88
Women's, misses' and children's clothing					
Women's and misses' dresses, housedresses, aprons and uniforms	215.3	210.4	198.4	192.9	−2.8
Women's and misses' coats and suits	212.2	212.9	211.1	200.5	−5.0
Women's and misses' sportswear	724.6	817.7	869.0	862.4	−0.8
Furs	46.3	41.3	32.6	32.6	—
Infants' and children's wear and nursery equipment	307.3	376.2	389.7	421.3	8.1
Girls' and teenage girls' wear	216.5	224.7	229.7	236.2	2.8
Lingerie and women's sleepwear	240.2	240.6	257.7	267.0	3.6
Intimate apparel	138.9	156.9	177.0	183.7	3.8
Millinery	21.8	16.3	17.2	18.1	5.2
Women's and girls' hosiery	131.3	144.6	150.0	165.6	10.4
Women's and girls' gloves, mitts and accessories	217.7	224.4	233.6	229.8	−1.6
Women's, misses' and children's footwear	317.4	363.5	382.2	376.9	−1.4
Total, women's, misses' and children's clothing	2,789.5	3,029.5	3,148.2	3,187.0	1.2
Men's and boys' clothing					
Men's clothing	506.4	458.4	418.9	413.1	−1.4
Men's furnishings	627.6	778.8	871.6	892.4	2.4
Boys' clothing and furnishings	175.9	211.0	228.2	229.1	0.4
Men's and boys' footwear	209.8	216.4	223.5	232.2	3.9
Total, men's and boys' clothing	1,519.7	1,664.6	1,742.2	1,766.8	1.4

18.17 DEPARTMENT STORE SALES BY DEPARTMENT, 1985-88 (concluded)

Department	1985 $'000,000	1986 $'000,000	1987 $'000,000	1988 $'000,000	Percentage change 1987-88
Food and kindred products	740.1	662.6	441.8	311.2	−29.6
Toiletries, cosmetics and drugs	720.6	774.9	780.5	836.9	7.2
Photographic equipment and supplies	148.7	135.2	131.2	128.6	−2.0
Piece goods	42.9	50.4	47.3	44.3	−6.5
Linens and domestics	381.2	411.8	439.1	464.5	5.8
Smallwares and notions	105.3	121.7	113.2	113.6	0.3
China and glassware	162.5	178.8	175.4	185.7	5.9
Floor coverings	162.0	163.4	158.1	167.6	6.1
Draperies, curtains and furniture covers	177.9	186.7	190.0	190.8	0.4
Lamps, pictures, mirrors and all other home furnishings	100.4	108.8	124.4	129.0	3.7
Furniture	581.1	569.2	612.8	668.0	9.0
Major appliances	575.8	524.5	563.3	599.6	6.4
Television, radio and music	515.0	537.9	549.0	602.1	9.7
Housewares and small electrical appliances	444.4	488.9	519.0	548.8	5.7
Hardware, paints and wallpaper	395.5	353.9	372.4	382.0	2.6
Plumbing, heating and building materials	115.4	147.5	155.9	162.4	4.1
Jewellery	301.2	338.3	326.1	314.5	−3.6
Toys and games	350.6	394.7	410.8	391.9	−4.6
Sporting goods and luggage	323.2	322.9	356.4	392.7	10.2
Stationery, books and magazines	376.7	395.5	403.9	419.7	3.9
Gasoline, oil, auto accessories, repairs and supplies	185.6	160.8	155.6	159.5	2.5
Receipts from meals and lunches	267.1	218.6	258.1	258.0	—
Receipts from repairs and services	144.9	199.7	237.2	280.9	18.4
All other departments	411.0	587.4	494.0	564.8	14.3
Total, all departments	12,038.6	12,728.5	12,906.0	13,271.1	2.8

18.18 SALES THROUGH VENDING MACHINES, DISTRIBUTION AND PERCENTAGE CHANGE, BY TYPE OF MACHINE, 1986 AND 1987

Type of machine	1986		1987		Percentage change 1986-87
	$'000	%	$'000	%	
Cigarettes	101,622	26.2	99,175	24.8	−2.4
Beverages					
Coffee	97,361	25.1	108,272	27.1	11.2
Soft drinks					
Canned or bottled	65,029	16.8	68,570	17.1	5.4
Disposable cups	16,257	4.2	14,955	3.7	−8.0
Packaged milk	5,609	1.4	5,688	1.4	1.4
Other beverages	7,887	2.1	7,740	1.9	−1.9
Confectionery and food					
Bulk confectionery	5,760	1.5	8,117	2.0	40.9
Packaged confectionery combinations	53,558	13.8	54,094	13.5	1.0
Pastries	4,374	1.1	3,595	0.9	−17.8
Snack foods	3,504	0.9	2,225	0.6	−36.5
Hot canned foods and soups	2,527	0.7	1,591	0.4	−37.0
Ice cream	1,013	0.3	730	0.2	−27.9
Fresh foods	22,466	5.8	25,031	6.3	11.4
All other commodities	273	—	252	0.1	−7.7
Total	387,238	100.0	400,032	100.0	3.3

18.19 DIRECT SALES BY COMMODITY, 1986 AND 1987

Commodity	1986		1987		Percentage change 1986-87
	$'000	%	$'000	%	
Meat, fish and poultry	16,143	0.6	17,511	0.6	8.5
Food plans	13,966	0.5	28,107	1.0	
Dairy products	279,870	11.0	274,387	10.0	−2.0
Bakery products	85,044	3.3	85,651	3.1	0.7
Other foods and beverages	92,723	3.6	101,013	3.7	8.9
Clothing and shoes	62,159	2.4	68,345	2.5	10.0
Fur goods	6,021	0.2	8,140	0.3	36.0
Books and encyclopedias	248,803	9.8	262,714	9.5	5.6
Newspapers	370,984	14.6	393,952	14.3	6.2
Magazines	162,560	6.4	152,895	5.5	.
Home improvement products and building supplies	62,368	2.5	155,880	5.7	
Household cleaners, soaps, brushes and brooms	50,963	2.0	45,400	1.6	−10.9
Dinnerware, kitchenware and utensils	114,002	4.5	120,411	4.4	5.6
Furniture, home furnishings and repairs	25,325	1.0	37,402	1.4	.
Household electrical appliances	183,669	7.2	157,680	5.7	. . .
Phonograph records and audio tapes	57,715	2.3	60,857	2.2	5.4
Video tapes, video games and equipment	[1]	.	[1]		.
Cosmetics and personal care products	192,249	7.6	209,309	7.6	8.9
Jewellery	66,703	2.6	54,274	2.0	−18.6
Boats and pleasure craft	8,255	0.3	7,697	0.3	−6.8
Canvas products: awnings, sails, tents, etc.	14,858	0.6	15,234	0.6	2.5
Greenhouse and nursery products	108,620	4.3	131,186	4.8	20.8
Orthopedic supplies and artificial limbs	9,324	0.4	11,340	0.4	21.6
Monuments and tombstones	14,878	0.6	13,685	0.5	−8.0
Toys, games, hobbies, crafts and cards	107,289	4.2	119,843	4.3	11.7
All other merchandise	188,086	7.4	224,086	8.1	19.1
Total, all commodities	2,542,575	100.0	2,757,144	100.0	8.4

[1] *Included in all other merchandise.*

18.20 SALES OF PRODUCTS AND SUPPLIES HANDLED BY CO-OPERATIVES, 1985-88 (MILLION DOLLARS[1])

Product	1985	1986	1987	1988
Marketing				
Grains	3,479	2,983	2,964	2,721
Oilseeds	878	621	557	661
Fruit	115	136	121	121
Vegetables	114	110	121	128
Dairy products	2,408	2,450	2,568	2,682
Poultry	303	305	333	320
Eggs	22	20	23	25
Livestock, cattle and sheep	424	400	511	642
Hogs	109	106	118	109
Fish	125	168	197	190
Forest products	63	83	98	138
Honey and maple products	31	30	30	31
Other	53	56	56	60
Total, marketing	8,123	7,468	7,696	7,826
Consumer and supply				
Food products	1,729	1,738	1,793	1,857
Dry goods and home hardware	297	300	290	291
Other	122	137	150	161
Sub-total, consumer and supply	2,148	2,176	2,233	2,309
Agriculture				
Animal feed	637	574	577	625
Fertilizer and chemicals	683	626	565	632
Seeds	75	98	109	98
Farm supplies	251	271	314	355
Sub-total, agriculture	1,646	1,569	1,565	1,709
Machinery, vehicles and parts	170	184	187	194
Petroleum products	1,062	977	999	1,034
Building materials	197	191	199	218
Other	15	10	12	16
Total, supplies	5,237	5,106	5,195	5,481
Total, sales	13,361	12,574	12,891	13,307

[1] *Rounded to nearest million.*

18.21 VALUE AND VOLUME OF SALES OF ALCOHOLIC BEVERAGES, 1986-87 TO 1988-89

Province or territory	Value ($'000)					
	Spirits			Wines		
	1986-87	1987-88	1988-89	1986-87	1987-88	1988-89
Newfoundland	69,602	74,153	77,850	11,777	12,846	13,151
Prince Edward Island	18,147	18,223	19,322	3,674	3,979	3,944
Nova Scotia	123,365	123,819	129,749	33,780	36,751	33,734
New Brunswick	68,838	69,060	69,262	19,378	20,441	21,441
Quebec	449,200	454,698	454,914	495,248	545,638	573,188
Ontario	1,189,772	1,230,761	1,241,687	516,746	556,083	578,505
Manitoba	152,923	154,891	151,747	43,770	45,126	43,287
Saskatchewan	143,104	146,435	142,589	28,440	29,402	26,697
Alberta	392,876	395,777	411,686	134,854	138,963	139,950
British Columbia	442,909	439,322	443,509	249,921	271,809	271,344
Yukon	6,587	6,696	6,332	2,386	2,470	2,286
Northwest Territories	10,654	10,912	11,513	2,416	2,560	2,575
Canada	3,067,977	3,124,747	3,160,160	1,542,390	1,666,068	1,710,102
	Beer			Total		
Newfoundland	144,391	151,852	164,211	225,770	238,851	255,212
Prince Edward Island	20,535	22,578	23,440	42,356	44,780	46,706
Nova Scotia	128,033	138,639	143,371	285,178	299,209	306,854
New Brunswick	106,554	114,032	121,049	194,770	203,533	211,752
Quebec	1,076,301	1,115,529	1,185,980	2,020,749	2,115,865	2,214,082
Ontario	1,512,180	1,664,280	1,812,889	3,218,698	3,451,124	3,633,081
Manitoba	153,185	164,970	172,106	349,878	364,987	367,140
Saskatchewan	131,170	134,202	143,982	302,714	310,039	313,268
Alberta	348,857	376,110	404,133	876,587	910,850	955,769
British Columbia	495,433	514,369	521,863	1,188,263	1,225,500	1,236,716
Yukon	7,393	8,191	7,881	16,366	17,357	16,499
Northwest Territories	11,022	11,923	12,236	24,092	25,395	26,324
Canada	4,135,054	4,416,675	4,713,141	8,745,421	9,207,490	9,583,403
	Volume ('000 litres)					
	Spirits			Wines		
Newfoundland	3,706	3,827	3,917	1,691	1,760	1,613
Prince Edward Island	782	774	780	594	564	559
Nova Scotia	6,182	5,755	6,352	5,592	6,074	5,364
New Brunswick	3,379	3,233	3,128	3,267	3,318	3,468
Quebec	21,711	21,929	21,299	72,565	78,394	80,840
Ontario	63,886	67,160	67,227	85,383	89,846	84,741
Manitoba	7,577	7,798	7,504	7,456	6,799	6,109
Saskatchewan	7,553	7,434	7,001	5,102	5,103	4,381
Alberta	21,401	20,126	19,445	22,470	21,586	21,002
British Columbia	23,676	22,597	21,516	48,074	50,204	47,218
Yukon	284	309	265	356	387	308
Northwest Territories	482	496	516	270	275	272
Canada	160,619	161,438	158,950	252,820	264,310	255,875
	Beer			Total		
Newfoundland	51,386	53,498	54,335	56,783	59,085	59,865
Prince Edward Island	8,694	8,609	8,618	10,070	9,947	9,957
Nova Scotia	62,214	62,978	62,474	73,988	74,807	74,190
New Brunswick	48,701	49,292	47,841	55,347	55,843	54,437
Quebec	538,082	557,673	554,336	632,358	657,996	656,475
Ontario	805,620	841,565	836,569	954,889	998,571	988,537
Manitoba	81,621	80,905	79,595	96,654	95,502	93,208
Saskatchewan	63,248	61,827	63,681	75,903	74,364	75,063
Alberta	175,023	172,076	173,028	218,894	213,788	213,475
British Columbia	233,549	233,538	233,169	305,299	306,339	301,903
Yukon	3,304	3,595	3,322	3,944	4,291	3,895
Northwest Territories	4,187	4,207	4,271	4,939	4,978	5,059
Canada	2,075,629	2,129,763	2,121,239	2,489,068	2,555,511	2,536,064

18.22 REVENUE OF PROVINCIAL AND TERRITORIAL GOVERNMENTS[1], DERIVED FROM THE CONTROL AND SALE OF ALCOHOLIC BEVERAGES, 1983-84 TO 1988-89 (THOUSAND DOLLARS)

Province or territory	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Newfoundland	70,028	74,767	82,780	74,360	79,366	81,953
Prince Edward Island	15,966	16,592	16,719	17,436	18,343	18,356
Nova Scotia	99,175	105,032	109,292	113,612	115,992	116,612
New Brunswick	68,776	71,779	75,027	78,609	81,159	83,434
Quebec	386,845	405,321	426,890	435,198	428,914	441,082
Ontario	778,355	857,282	887,573	958,194	992,027	1,059,445
Manitoba	129,167	137,004	140,348	142,891	152,492	151,206
Saskatchewan	113,403	117,113	121,489	123,407	128,139	125,439
Alberta	298,956	305,063	323,346	324,020	362,504	390,133
British Columbia	364,618	369,186	413,574	445,296	441,773	420,134
Yukon	5,800	5,890	5,642	6,671	6,995	7,726
Northwest Territories	9,124	9,189	10,076	10,180	10,484	11,531
Total	2,340,213	2,474,218	2,612,756	2,729,874	2,818,188	2,907,051

[1] *Excludes the general sales taxes levied by most provinces.*

Source

Statistics Canada.

Notman & Son/National Archives of Canada/C 11723

BANKING AND FINANCING

19.1 INTRODUCTION

Imperial Oil/National Archives of Canada/PA 96536

Early bank branches often matched the make-do ruggedness of the frontier they served. This canvas tent served Union Bank of Canada customers in the Northwest Territories.

CANADA'S BANKING SYSTEM has developed quite differently from those of other industrialized countries. From the beginning, Canada's banking power has been concentrated, laying the foundation for the present domination of the "Big Five" — the Royal Bank, the Bank of Montreal, the Canadian Imperial Bank of Commerce, the Bank of Nova Scotia and the Toronto Dominion Bank. These banks control over 90% of bank assets in Canada, and rank with the largest banks in the world.

Canada's first banks were established at the beginning of the 19th century, and by Confederation 28 had been chartered.

Under the Constitution Act, 1867, the federal government became responsible for regulating banks. The first Bank Act, passed in 1871, required banks to have a minimum of $100,000 in capital before they could be chartered. This requirement ensured slow, steady growth — over the next 15 years, 10 new banks were chartered. By this point, most of the banking market had been captured, and the number of banks remained relatively stable until the end of World War I.

In subsequent decades, however, most banks either failed, ceased operations, or were bought out by larger competitors. By 1964, the number of chartered banks had dropped to an all-time low of eight.

Revisions to the Bank Act in 1980 defined two types of banks based on ownership, subjecting them to different investment limitations. This opened the door to competition by foreign banks. In 1990, the 10 Canadian-owned banks had 7,150 branch offices across the country, while 55 subsidiaries of foreign banks operated 206 branch offices. This branch-banking system is unusual; in most other countries, the number of banks is much higher. For instance, the US restricts the number of branches a bank can have, and as a result there are almost 15,000 separate banks.

Financial institutions in Canada can be classified into four main groups. The monetary group comprises the Bank of Canada, chartered banks, trust and loan companies, and other banking institutions. The second group consists of insurance companies and pension funds. The third includes investment dealers and brokers, investment funds and small finance and loan companies. The final group comprises government institutions that provide financial services to borrowers and lenders.

In the 1990s, financial trends will build on increased computerization and electronic banking, expanded foreign competition, easier entry into banking, lower reserve requirements, greater diversity in financial products, and broader financial powers for some financial institutions.

19.2 MONETARY POLICY

UNION BANK OF CANADA

O.S. Finnie/National Archives of Canada/PA 100268

Banking in Fort Smith, Northwest Territories, 1921.

Canada's financial institutions are regulated under a number of Acts of Parliament that protect borrowers and lenders and promote effective and equitable competition. The Bank of Canada, Canada's central bank, was established in 1934 to issue paper currency and to manage the national monetary system. The Bank indirectly controls money and credit in Canada, and thereby affects levels of spending and economic activity. Its Board of Directors comprises a Governor, a Deputy Governor and 12 directors. The directors, appointed for three-year terms by the Minister of Finance, in turn appoint the Governor and Deputy Governor for seven-year terms. All of these appointments are made with the approval of the Governor-in-Council. The Deputy Minister of Finance sits on the board but does not have a vote.

Although the Bank of Canada is largely independent, ultimate responsibility for monetary policy rests with the federal government. The Bank of Canada Act provides for regular consultation between the Governor of the Bank of Canada and the Minister of Finance. It also gives the government the right to direct the Bank of Canada on monetary policy in the event of a disagreement between the government and the Bank. However, such a disagreement has never arisen.

The underlying objective of monetary policy is stability in the general level of prices: this stability reflects public confidence in the value of the nation's money. In deciding monetary policy, the Bank of Canada analyzes a range of financial and economic variables, including the trend of total spending, the behaviour of costs and prices, and the ability of the economy to expand production to meet demand.

Reserve requirements The Bank of Canada implements monetary policy through its control of the money supply — the cash and liquid deposits held by Canadian households. The Bank cannot modify the money supply directly, but it exercises control through the chartered banks. The source of this control is the Bank Act's requirement for chartered banks to keep a percentage of their deposit liabilities as cash reserves to cover possible demands for withdrawals. These reserves may be held as deposits at the Bank of Canada or as holdings of currency. Chartered banks use cash reserves in excess of the minimum requirements to make loans and expand their total assets and liabilities — in other words, to "create" money. However, this ability is limited by the total amount of cash reserves available.

Transfers of government deposits Because the Bank of Canada is the fiscal agent of the federal government, it can alter the level of cash reserves in the financial system by transferring government deposits between the chartered banks and itself. When the Bank transfers government deposits to the chartered banks, it increases overall cash reserves and puts the chartered banks in a position to loan more money. This places downward pressure on interest rates and indirectly encourages the public to hold cash because savings will bring lower returns and borrowing is less costly. Conversely, when the Bank transfers government deposits to itself, cash reserves contract, causing short-term interest rates to rise and making it more costly for the public to hold currency and non-interest-bearing deposits.

Open market operations In addition to transferring government deposits, the Bank of Canada can influence interest rates by purchasing and selling government securities on the open market. When the Bank buys securities, cash reserves in the chartered banks increase and short-term interest rates tend to fall. When the Bank sells securities, cash reserves decrease and short-term interest rates rise.

Secondary reserve requirements A third mechanism the Bank uses to implement monetary policy is to vary requirements for secondary reserves (compulsory reserves in excess of the minimum requirements) for chartered banks. Subject to certain restrictions, the Bank can vary the secondary reserve requirement between 0% and 12% of Canadian dollar deposit liabilities. Even a very small change in the reserve requirement results in a large change in cash reserves available for loans.

The bank rate To meet their reserve requirements, the chartered banks sometimes have to borrow from the Bank of Canada. The Bank regularly announces the minimum rate at which it is prepared to make loans and advances — this is known as the"bank rate". The way the bank rate is administered has changed from time to time, but since March 13, 1980, it has been fixed at 1/4 of 1% above the rate established for 91-day treasury bills auctioned by the Bank of Canada each Thursday.

The Bank of Canada also makes loans to other financial institutions and to members of the Canadian Payments Association, the national clearing and settlements system. This gives the Bank additional flexibility in administering monetary policy.

19.3 THE INSTITUTIONS

CURRENCY AND COINAGE

Currency Before the Bank of Canada was established, paper currency was issued by a variety of banks and institutions in Canada. When the Bank began operations in 1935, it assumed liability for all Dominion notes outstanding, which it gradually replaced as legal tender with Bank of Canada notes. The 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes as of January 1, 1945, and in January 1950 all outstanding notes were transferred to the Bank of Canada.

At the end of 1989, bank notes in public hands amounted to $19.0 billion, compared to $13.3 billion in 1985. (See Table 19.5.)

Coinage Canadian coins are issued by the Royal Canadian Mint, a Crown corporation. The dimensions, designs and denominations of these coins are determined by the Governor-in-Council or by the Royal Canadian Mint Act. Canada's circulating coins are produced in the Mint's Winnipeg plant. The Ottawa plant produces gold, platinum, and silver bullion investment coins, collectors' coins, medals and plaques, and also refines Canadian gold. The Mint reports to Parliament through the Minister of Supply and Services.

At the end of 1989, $252.4 million in Canadian coins were in circulation, compared to $239.8 million in 1987. Refining of Canadian gold produced 3.6 million Troy ounces in 1989, and 0.7 million Troy ounces of refined silver as a byproduct. (See Table 19.7.)

National Archives of Canada/PA 32453

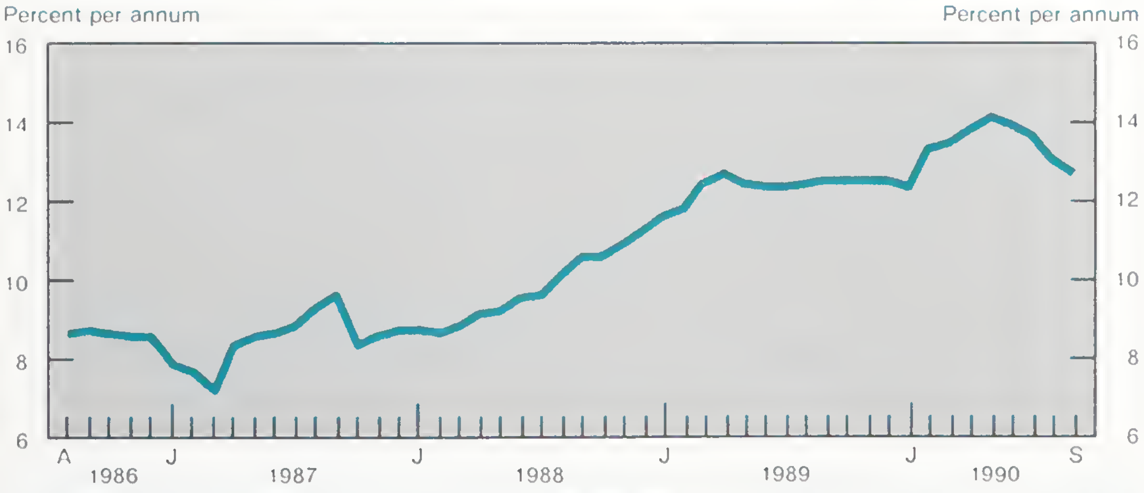
Bank of Montreal, Montreal, Quebec.

CHARTERED BANKS

Canada's chartered banks operate under the Bank Act, which regulates operations such as account audits and stock issues and also sets reserve requirements. The Bank Act is revised about every 10 years to account for changes in the Canadian financial system.

Chart 19.1

BANK RATES FROM AUGUST 1986 TO SEPTEMBER 1990



Canadian banks generally accept various kinds of deposits from the public, including accounts payable on demand, chequing and non-chequing notice deposits, and fixed-term deposits. In addition to holding a portfolio of securities, the banks typically make loans for commercial, industrial, agricultural and consumer purposes. Under the current revision of the Bank Act, banks may conduct certain kinds of leasing and factoring businesses through subsidiaries. In general, banks also deal in foreign exchange, receive and pay out bank notes, and provide safekeeping facilities. In 1989, the net income of Canadian chartered banks was just over $2 billion. (See Table 19.9.) Monthly data on chartered banks are available in the *Bank of Canada Review*.

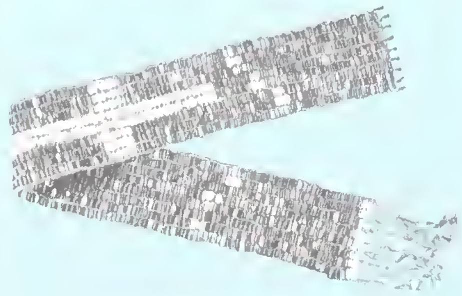
THE STORY OF CANADA'S CURRENCY

Aside from the main use money has had within civilizations from time immemorial, it also serves as a useful historical record of people and nations. The story of Canada's currency is interesting because of the many shapes and forms this money has taken.

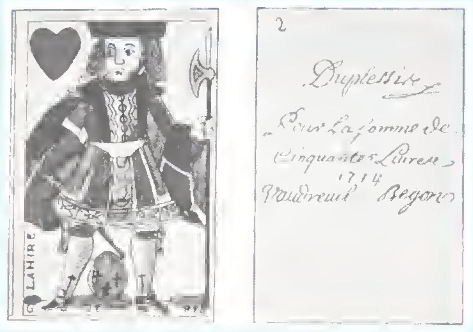
In North America's earlier days, aboriginal peoples used wampum, an article made of small beads or tubes from seashells, as a form of money for trade. Due to an absence of coins, wampum was initially adopted by the British-American colonies, but in 1670 it was rendered illegal by French Canadian authorities. Nonetheless, it continued to circulate among aboriginal peoples until the early 1800s.

From 1645 onward, metallic and paper currency played an influential role in Canada. Up to this point there had not been any great need for currency, and what little was used came from France and other countries. With the settling and growth of French colonies, there was a growing demand for currency and interim devices such as "playing card money" were introduced. This money was made by cutting playing cards into quarters, which were then given an official wax seal and signature. Since this money was not recognized by France, it tended to stay within the colony. Plain card stock was used for later issues. Though the government of France tried to put an end to the issue of this money, the cards maintained an important role in French Canada's currency until 1759.

The increase of business transactions in the colonies eventually created the need for financial institutions, and banking began to appear as early as 1792. The first known operational Canadian bank was established in Montreal in 1817. This bank issued plates in Spanish dollar denominations, since the Spanish dollar was in common use throughout the Americas. Trade was conducted in Spanish, Portuguese and US currency, all of which were strong and readily available. After an initial distrust in Canada of paper money subsided, alternatives were found to deal with the demand for reliable currency. Tokens and "Bons" (short for "Bon pour" or "Good for") were redeemable at face value for merchandise and for such items



Wampum, used by Canada's aboriginal peoples as a means of exchange.



2

Dupleſsis

Pour la ſomme de
Cinquante Livres
1714
Vaudreuil Begon

Card money found in French Canada from 1685 to 1759.

GLORIAM REGNI TUI DICENT 1670
LUD.XIIII.D.G.FR.ET.NAV.REX

The silver 15 Sol piece used in 17th century Canada.

FERDIN.VII.DEI.GRATIA

The Prince Edward Island Holey Dollar (18th century).

HB
E M
1
N B
HB
E M
1/2
N B
HB
E M
1/4
N B
HB
E M
1/8
N B

A Hudson's Bay Company token — used in Canada's early fur trade.

as railway tickets. They were issued by merchants as small change, which was often in short supply.

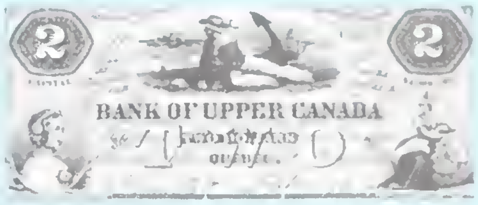
From the beginning of the 19th century, banking institutions in each province were empowered to issue their own currency, and thus began to play a major role in the circulation of money. The first copper bank tokens were introduced by the Bank of Montreal, the Banque du Peuple, the City Bank and the Quebec Bank. From 1823 to as late as 1871, the provinces of Nova Scotia, New Brunswick, Prince Edward Island and British Columbia produced coinage. In Central Canada, this "hard" currency was often lost to the United States in cross-border trade.

The need for a uniform national currency became increasingly apparent. Francis Hincks, then Prime Minister of the Province of Canada, recognized this and won control of currency in 1858.

With Confederation in 1867, Parliament confirmed its control of currency throughout the new Dominion of Canada, and the ***Bank Act*** *of 1871 ensured that provincial currency acts did not conflict with federal control. This Act also co-ordinated the issue of currency by banks. The government issued its own Dominion of Canada notes in 1870 in denominations of 25 cents, $1.00 and $2.00. Notes in larger denominations eventually followed.*

In 1934, the newly created Bank of Canada assumed the task of issuing Canada's paper currency. Notes issued by chartered banks were gradually taken out of circulation. In 1935, the Bank of Canada issued separate French and English notes for the first time. Since 1937, all bank notes have been bilingual. There have been five distinct series of paper currency issued, the latest in 1986. Though the style of the notes has changed over the years, the colours for each denomination have been constant since 1954.

The latest addition to Canada's currency is the dollar coin, which features the loon, a symbol of Canada's natural heritage.



The Bank of Upper Canada, Two Dollars, 1859

The Bank of Prince Edward Island, Ten Shillings, 1860

Dominion of Canada, 25 cents, 1870.

Dominion of Canada, 50 cents, 1871 and 25 cents, 1881.

Dominion of Canada, One Dollar, 1870.

Dominion of Canada, 10 cents, 1870 and 5 cents, 1880.

Dominion of Canada, Two Dollars, 1870.

Dominion of Canada, one cent, 1886.

Photos: National Currency Collection, Bank of Canada

Dominion of Canada, Four Dollars, 1882.

Royal Canadian Mint

Royal Canadian Mint Building in Ottawa.

Royal Canadian Mint

Making coins at the Royal Canadian Mint.

THE ROYAL CANADIAN MINT

The Royal Canadian Mint is the largest refiner of gold in the Western Hemisphere, with two production plants, one in Ottawa, the other in Winnipeg. Products and services it markets in some 65 countries include Canadian circulation coins, numismatic or collector coins, bullion investment coins, custom minting, gold and silver refining, and the striking of foreign numismatic and circulation coins.

The mint's premier product, the Gold Maple Leaf, is the world's leading bullion investment coin. However, like most national mints, the Royal Mint's main role is to manufacture the coins Canadians use in 80% of all their daily cash transactions. It has a total production capacity of more than 1 billion coins annually.

Canada's first coins, however, were minted in Britain during the early years of Confederation, and competed with the confusing array of foreign and provincial gold, silver and copper coins and tokens that made up the young country's currency. By the time of the great Klondike gold rush of 1897 there was considerable pressure for the maturing Dominion to mint its own coins. With the sudden news of major goldfields found in the far north, it became a widely-held opinion that if the gold was not minted in Canada, then it would probably not be spent in Canada either.

The **Ottawa Mint Act** *was passed in May 1901, but construction of the first Canadian branch of the Royal Mint was delayed until 1908. The decision to locate the mint in Ottawa, rather than in the more natural gold collection points of Victoria, Vancouver or Dawson, was widely debated. The mint's official history also notes that a minor scandal arose over the costs of security, which had somehow been overlooked in the planning.*

The Ottawa branch of the Royal Mint began operations on January 2, 1908, but it soon became apparent that for the minting of gold coins — the major reason the mint had been built — the country would need a refinery to process the ore arriving from the fields. The refinery was finally completed in 1911, and although an economic slump followed the declaration of war in Europe a few years later, eventually the wartime economy stimulated the demand for coins. By 1916, the mint was producing over 19 million pieces annually.

During the 1920s friction developed between the Canadian and British governments concerning the administration of the mint, particularly over finances and appointments. When the Conservatives under R.B. Bennett were swept into power in 1930, discussions about Canadian ownership of the mint gathered momentum, and within a year the transfer was completed under an Act of Parliament. The Royal Canadian Mint operated under the Department of Finance until 1969, when it became a Crown corporation.

Today the Winnipeg branch of the mint strikes Canadian and foreign circulation coins as well as tokens and trade dollars, while the Ottawa plant, still located in the original 1908 building, handles more specialized products and services: Canadian and foreign numismatic coins, investment coins, refinery services and medals.

FEDERAL BUSINESS DEVELOPMENT BANK

The Federal Business Development Bank (FBDB) is a Crown corporation created in 1974 to assist new and existing businesses in Canada by offering financial and management services. The FBDB extends financial assistance to firms that do not have other sources of financing available, and its consulting services help small firms improve their management methods.

TRUST AND MORTGAGE LOAN COMPANIES

The number of trust and mortgage loan companies has grown rapidly since these institutions were established under provincial legislation in the late 19th and early 20th centuries. Some companies were chartered by special acts of Parliament, and in 1914 the federal government began to regulate trust and mortgage loan companies. Today, companies operate under the Federal Loan Companies Act and the Trust Companies Act or corresponding provincial legislation. Companies must be licensed by each province in which they operate.

Trust companies do two distinct types of business: financial intermediation and fiduciary (holding assets in trust).

As financial intermediaries, trust companies accept funds in exchange for credit instruments such as trust deposits and guaranteed investment certificates. This portion of their business is similar to the savings business of chartered banks.

Federal and provincial legislation applying to financial intermediation sets investment restrictions as well as maximum ratios of funds in guaranteed accounts to shareholders' equity. The minimum cash reserves required for chartered banks do not apply to trust and loan companies, but liquid asset requirements are defined in a number of the regulatory acts.

Trust companies are the only corporations in Canada with the power to conduct fiduciary business. In this capacity they act as trustees for pension funds; as registrars and transfer agents for corporate share issues; as trustees for corporate debt issues; and as administrators of estates, trusts and agencies.

Mortgage loan companies may also accept deposits and issue both short-term and long-term debentures. Legislation regulates how these funds may be invested; most are invested in mortgages secured by real estate.

Assets of trust and mortgage companies In the 1920s, trust and mortgage companies held about half the private mortgage business in Canada. After slow growth during the depression and World War II, these companies expanded rapidly, and now hold about two-thirds of Canada's private mortgage business.

At the end of 1989, total assets of trust companies were $119.8 billion, a 33.2% increase from 1987. These companies held 64.4% of their total assets as mortgages, compared to 62% in 1987. They held $80.7 billion in term deposits and $26.4 billion in demand and notice deposits, accounting for 89.4% of total funds. About 42% of demand or savings deposits were in chequing accounts. (See Table 19.12.)

Trust companies offer a variety of services, but their main business is channelling savings into mortgages. A few have also developed a substantial short-term business, issuing certificates for terms as short as 30 days and operating as lenders in the money market. In addition, trust companies were administering $219.3 billion in estate, trust and agency accounts at the end of 1989.

Mortgage loan companies had total assets of $117.5 billion at the end of 1989, a 51.7% increase over 1987. Their holdings of mortgages were $94.8 billion, or 81% of total assets. These companies held $58.3 billion in term deposits, $41.3 billion in demand deposits and $550.3 million in outstanding debentures. (See Table 19.13.)

Complete and up-to-date financial information on trust companies is contained in quarterly financial statements published by Statistics Canada and the Bank of Canada, and in the reports of the superintendent of financial institutions and of provincial supervisory authorities.

OTHER BANKING INSTITUTIONS

Chartered banks, trust and mortgage companies are not the only institutions offering savings and loan services in Canada: these services are also available from credit unions and, in Ontario and Alberta, from provincial government financial institutions.

Co-operative credit unions encourage savings and offer various kinds of loans to members. They are regulated by provincial legislation.The first credit union in Canada was founded in 1900. Growth in numbers was slow at first, but since the 1940s the increase has been spectacular.

At the end of 1989, Canada had 2,980 chartered local credit unions reporting total assets of $67.1 billion. Assets had increased 21.9% from 1987, and more than half were held by Quebec credit unions. Outstanding loans (including mortgages) amounted to $51.7 billion, a 19.2% increase from 1987.

Central provincial credit unions provide financial and other services to nearly all local credit unions. There were 13 central credit unions in 1989, with total assets of $17.2 billion.

CANADIAN BANKS

There are about 7,000 bank branches in Canada, most belonging to the five largest Canadian banks: the Royal Bank, Bank of Montreal, Canadian Imperial Bank of Commerce, Bank of Nova Scotia, and the Toronto-Dominion Bank. Indeed, these five banks control over 90% of bank assets in Canada, and have subsidiaries throughout the world.

There is some question as to which was Canada's first chartered bank. The Bank of Montreal opened its doors in 1817 but was not granted a charter until 1822, somewhat after the Bank of New Brunswick (1820) and the Bank of Upper Canada (1821). There were 28 chartered banks by Confederation and 38 by 1886. While in the United States many regional, independent banks were estabilshed, in Canada a relatively small number of chartered banks spread through branches in the various regions. The number of chartered banks in Canada declined in World War I, and had fallen to eight by 1964. But the number of banking branches has nearly doubled since the 1930s. In 1990 there were 10 chartered banks and 55 foreign banks incorporated under letters of patent.

J.R. Wrathall/National Archives of Canada/PA 95708

Victory Bond Drive, Prince Rupert, British Columbia, 1941.

The History of Canada Savings Bonds

In 1989, 3 million Canadians invested over $9 billion in Canada Savings Bonds. The popular government bonds have their roots in the First and Second World Wars, when an intensive effort was made to finance a significant part of the war effort through the sales of securities to the public — everything from War Savings Certificates and Stamps to Victory Bonds.

At the end of World War II, Victory Bond buyers were surveyed to find out if there was continued interest in a savings program through the purchase of government bonds. Nearly 90% were in favour, and so the first Canada Savings Bonds were issued in November, 1946. The bonds were available to Canadian residents to a maximum of $2,000, and the interest offered was 2.75% per year.

Modifications were made over the years offering variable interest rates and opening up the eligibility provisions to include estates and executors of estates. The first compound interest option was introduced in 1966, and a year later eligibility was widened further to include trusts, religious institutions and charitable and non-profit organizations. Unfortunately, it became difficult to regulate the sale of the bonds, especially since many of the religious institutions and charitable and non-profit organizations were not registered for taxation purposes. In 1971 their eligibility was revoked.

Another major change came in 1977 when the bonds were divided into Regular Interest ("R" bonds) and Compound Interest ("C" bonds), and coupons were eliminated. Previously, 93% of all Canada Savings Bonds were in coupon form and each year over 14 million coupons would be presented for processing. These coupons could not be handled smoothly by a computerized system, and were a huge administrative burden on financial institutions and the Bank of Canada. Also, the coupons were small pieces of paper, and if lost the purchaser missed out on interest payments for that year. In addition, many people simply forgot to cash in their coupons over the years. Now interest on Regular bonds is paid by cheque or direct deposit every November 1, while interest on Compound bonds is payable upon redemption, and any lost certificates can be replaced.

Between 1946 and 1990 Canadians purchased more than $180 billion worth of Canada Savings Bonds. It is estimated that at least one Canadian in three currently holds Canada Savings Bonds, and at least one in two has purchased them at some time.

19.4 INSURANCE

About 900 companies and societies transact insurance business in Canada. Insurance companies are regulated by the federal government and by the provinces; these regulations ensure solvency and protect consumers from unfair practices. Many kinds of insurance coverage are available, but they can be grouped broadly into life insurance and property and casualty insurance.

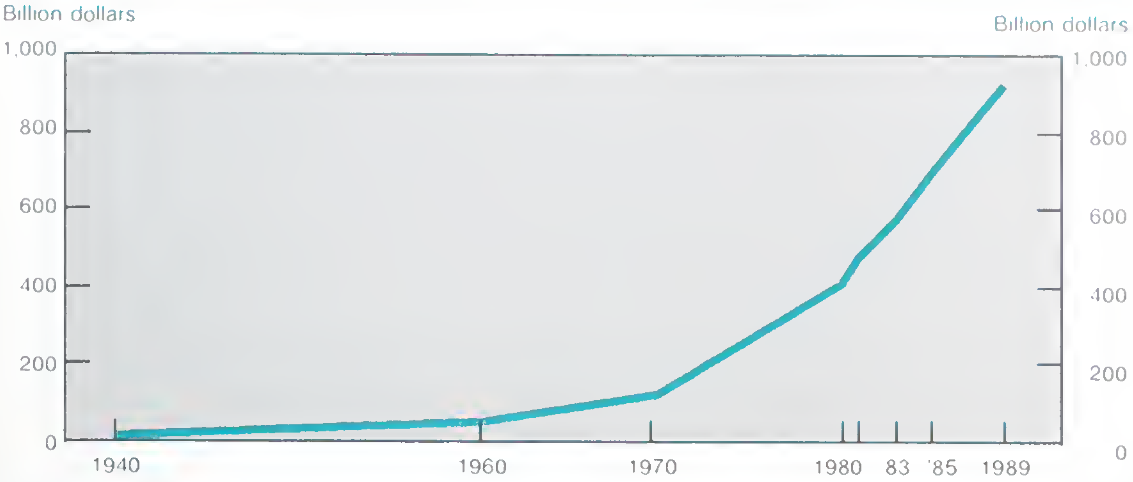
LIFE INSURANCE

At the end of 1988, 155 federally-registered life insurance companies were operating in Canada. Of these, 59 were Canadian and 96 were non-Canadian. There were also 39 registered fraternal benefit societies.

Life insurance owned by Canadians at the end of 1989 amounted to $917.7 billion, compared to $763.0 billion at the end of 1986. The average life insurance coverage for each insured Canadian was about $71,100, while the average for each insured household was about $111,000. In 1989, Canadians purchased $146.4 billion in life insurance.

Chart 19.2

LIFE INSURANCE WITH FEDERALLY REGISTERED COMPANIES, SELECTED YEARS



Of all insurance owned by Canadians in 1989, 82% had been issued by Canadian companies, 12.4% by American companies, 3.7% by British companies and the remainder by companies incorporated in other parts of Europe.

Registered fraternal benefit societies had $5.6 billion in certificates in force at the end of 1989, up from $5.0 billion in 1987. Premiums on policies written in Canada totalled $138 million — $97 million for Canadian societies and $41 million for foreign societies. Canadian societies also reported $226 million in premiums on policies written outside Canada.

PROPERTY AND CASUALTY INSURANCE

At the end of 1989, 266 federally-registered companies were transacting property and casualty insurance in Canada. Of these, 113 were Canadian and 153 non-Canadian.

Direct premiums on policies written by federally-registered companies for property and casualty insurance totalled $11.8 billion in 1989, down from $13.5 billion in 1986. Net premium income totalled $11.4 billion, up from $9.6 billion in 1986. Property insurance accounted for $3.7 billion of net premiums, automobile insurance for $5.8 billion, liability insurance for $1.2 billion, other casualty insurance for $456 million, personal accident and sickness insurance for $244 million and marine insurance for $83 million.

Net claims incurred were $9 billion in 1989. Property insurance claims were $2.4 billion, automobile insurance claims $5.4 billion, liability claims $758 million, other casualty claims $243 million, personal accident and sickness claims $140 million and marine claims $61 million.

Most of the income insurers generate comes from investments. In fact, premiums have not covered operating expenses and claims paid out for more than a decade. In 1978, the deficit was $12.3 million; by 1989, it had risen to $1.4 billion.

GOVERNMENT INSURANCE

Deposit insurance Established in 1967, the Canada Deposit Insurance Corporation (CDIC) insures deposits made with its members and promotes sound business and financial practices. Membership in CDIC is limited to banks, trust companies and loan companies. Federally-incorporated financial institutions cannot accept deposits from the public unless they are members of CDIC. For provincially-incorporated institutions, CDIC membership must be authorized by the province.

CDIC's maximum deposit insurance is $60,000 per individual, regardless of how many accounts that person holds with the same member. Insurable deposits include Canadian savings and chequing accounts, money orders, deposit receipts, certified drafts or cheques, traveller's cheques, and term deposits with terms of five years or less. Insurance up to $60,000 also applies to joint deposits, trust deposits and deposits held in registered retirement savings plans or registered retirement income funds.

Provincial automobile insurance The provinces of Quebec, Manitoba, Saskatchewan and British Columbia operate compulsory automobile insurance plans. These plans provide basic universal coverage for automobiles. Government insurance companies may also offer extended coverage in competition with private insurers.

BANKING AT THE POST OFFICE

In 1867, Canadian post offices came up with an innovative addition to their primary business: they opened a series of savings account banks. The system originated in the United Kingdom and was put in place to encourage workers to deposit their earnings in a safe place.

Deposits had to be at least $1, but could not exceed $300 annually. The post office banks were popular and deposits grew steadily until 1908, when they reached a record total of $48 million.

However, with the advent of other savings institutions deposits dropped and a gradual merger with federally-operated banks began. By 1929, post office savings banks had virtually disappeared.

MANDATS
POSTE
5

Eugene M. Finn/National Archives of Canada/PA 168271

Banking at the Post Office, 1928.

THE MONEY MACHINE

The most conspicuous recent change in the way that Canadians do their banking has come about with the rise of the Automated Banking Machine (ABM) — computer terminals that allow customers to withdraw, deposit, and transfer funds by themselves, without consulting a teller. The Canadian Bankers' Association estimates that in 1990 there were nearly 7,400 of these machines across the country, up from only 1,200 in 1983.

The technology has been changing rapidly, and has been part of the much larger "computerization" of banking institutions which now allows for instant records-keeping, passbook updating, funds transferral, credit checks, and direct deposit of pension and pay cheques into accounts. Customers now have access to their accounts at any time of day or night, and on weekends as well, from points across the country. Over 24 million access cards have been issued for Interac, Canada's largest network of ABMs, which has been operating since June 1986. In the latest development, many stores are now offering direct debit service using bank access cards.

Cheques, currency and paperwork, however, have hardly disappeared, and a new problem has arisen: security. Faced with the need to keep track of access cards and personal identification numbers, consumers now find themselves more responsible for safeguarding their accounts.

One thing that computerized banking has encouraged is Canadians' traditional propensity to save money. The number of personal savings accounts in Canadian chartered banks increased by almost 8 million in the last decade, topping 33 million in 1989.

19.5 INSOLVENCY

Insolvency occurs when a person or business can no longer pay debts as they become due.

Bankruptcy is a legal process by which debtors are able to stay all legal actions pertaining to their debts. Generally, this means that a trustee seizes all of the debtor's property and distributes this property among creditors. The debtor is then relieved of future liability for most of the debts existing when bankruptcy was declared.

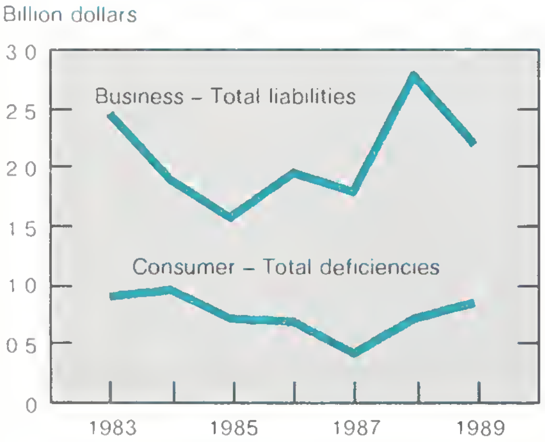
The Bankruptcy Act makes a distinction between consumer bankruptcy and commercial bankruptcy. Consumer bankruptcy protects financially overburdened debtors from legal actions such as seizure of assets and wage garnishment. Commercial bankruptcy is usually more complex, involving the equitable distribution of assets to creditors when companies become insolvent.

Bankruptcies are regulated by the Bankruptcy Act and are supervised by the Superintendent of Bankruptcy, who is appointed by the Governor-in-Council. The Superintendent acts as Director of the Bankruptcy Branch of Consumer and Corporate Affairs Canada; he or she licenses and supervises all bankruptcy trustees, examines bankrupt estates for possible offenses under the Bankruptcy Act or the Criminal Code, maintains a record of bankruptcies and related statistical information, and supervises the consumer bankruptcy program.

Receiverships are the other major consequence of commercial insolvency. They occur when a creditor who has loaned money to a business under a security agreement asks for the appointment of a receiver to take possession or control of all or part of the property of the business. In both bankruptcies and receiverships, unsecured creditors usually receive little or nothing after the secured creditors have collected.

Chart 19.3

BUSINESS AND CONSUMER BANKRUPTCIES, 1983-89



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SGI Insurance Services, Saskatchewan.
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Canada Deposit Insurance Corporation.
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Federal Business Development Bank.
Labour Canada.
Manitoba Public Insurance Corporation.
Montreal City and District Savings Bank.
Office of the Superintendent of Financial Institutions Canada.
Royal Canadian Mint.
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Industrial Corporations, Financial Statistics,* quarterly, 61-003.
- *Financial Institutions, Financial Statistics,* quarterly. 61-006
- *Corporate Financial Statistics,* annual. 61-207
- *Credit Unions,* annual. 61-209
- *Annual Report of the Minister of Supply and Services Canada under the Corporations and Labour Unions Returns Act. Part I : Corporations,* annual. 61-210
- *Capital and Repair Expenditures, Manufacturing Sub-industries, Intentions,* annual. 61-214
- *Capital Expenditures of Domestic and Foreign Controlled Establishments in Manufacturing, Mining and Forestry,* annual. 61-215. Discontinued, last issue 1987.
- *Exploration, Development and Capital Expenditures for Mining and Petroleum and Natural Gas Wells, Intentions,* annual. 61-216.
- *Small Business in Canada, a Statistical Profile,* annual. 61-231
- *Inter-corporate Ownership,* biennial. 61-517
- *Sales per Selling Area of Independent Retailers,* 1986. 61-522. Out of print.
- *Small Business Profiles, Canada, Provinces and Territories, 13 volumes,* annual. 61-601 to 61-613. Discontinued, last issues 1984 or 1985.

TABLES

LEGEND

.. *not available*
... *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*

e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

19.1 ASSETS AND LIABILITIES OF THE BANK OF CANADA, AS AT DECEMBER 31, 1985-89 (MILLION DOLLARS)

Item	1985	1986	1987	1988	1989
Assets					
Government of Canada direct and guaranteed securities					
Treasury bills	3,984	7,804	9,677	9,685	10,816
Other securities three years and under	3,460	2,969	2,603	3,051	3,425
Other securities over three years	8,224	7,438	7,915	7,610	6,585
Advances to members of the Canadian Payments Association	3,469	868	798	485	312
Other investments	3	1,024	1,187	2,358	2,765
Foreign currency deposits	569	323	311	632	370
All other assets	1,426	518^r	532	497	508
Total assets	21,135	20,944^r	23,023	24,318	24,781
Liabilities					
Notes in circulation					
Held by chartered banks	3,371	3,693	4,004	4,428	4,353
All other	13,301	14,218	15,443	16,604	17,740
Canadian dollar deposits					
Government of Canada	313	49	23	14	21
Chartered banks	2,201	2,446	2,649	2,177	1,787
Other members of the Canadian Payments Association	206	241	287	260	230
Other	169	159	429	307	397
Foreign currency liabilities	372	87	134	473	209
All other liabilities	1,202	51	53	55	44
Total liabilities	21,135	20,944^r	23,023	24,318	24,781

19.2 CANADIAN DOLLAR CURRENCY AND CHARTERED BANK DEPOSITS, AS AT DECEMBER 31, 1978-89 (MILLION DOLLARS)

Year	Currency outside banks			Chartered bank deposits				Total currency and chartered bank deposits[1]		
	Notes	Coin	Total	Personal savings deposits	Government of Canada deposits	Other deposits[1]	Total[1]	Total including government deposits	Held by general public	
									Including personal savings deposits	Excluding personal savings deposits
1978	8,075	890	8,965^r	51,528	6,466	42,023	100,017	108,982^r	102,516	50,988
1979	8,514	954	9,468	64,216	2,418	51,288	117,922	127,390	124,972	60,756
1980	9,377	1,024	10,401	74,945	4,093	52,838	131,876	142,277	138,184	63,239
1981[2]	9,638	1,081	10,719	92,513	7,138	67,355	167,006	177,725	170,587	78,074
1982	10,491	1,142	11,633	100,037	6,906	66,800	173,743	185,376	178,470	78,433
1983	11,607	1,202	12,809	101,485	6,057	62,272	169,814	182,623	176,566	75,081
1984	12,250	1,259	13,509	109,468	2,797	64,527	176,791	190,300	187,503	78,035
1985	13,301	1,321	14,622	119,063	4,350	63,327	186,740	201,362	197,012	77,949
1986	14,218	1,383	15,601	129,855	2,045	67,531	199,431	215,032	212,987	83,132
1987	15,443	1,531^r	16,974	138,224	1,817	76,837	216,878	233,852^r	235,035^r	93,811^r
1988	16,604	1,654	18,258	157,333	1,844	81,593	240,770	259,028	257,184	99,851
1989	17,740	1,963	19,703	184,228	2,078	88,075	274,381	294,084	292,006	107,778

[1] *Less total float (cheques and other items in transit).*
[2] *Effective November 1981, chartered bank data are reported on a consolidated basis.*

19.3 CHARTERED BANKS, CASH AND SECONDARY RESERVES, 1978-89 (MILLION DOLLARS)

Year	Statutory deposits (excluding adjustments for previous periods)		Cash reserves		Secondary reserves
	Canadian dollar	Foreign currency	Statutory coin and Bank of Canada notes	Bank of Canada deposits	
1978	91,299	—	1,250	3,997	5,455
1979	107,162	—	1,361	4,564	6,330
1980	123,753	—	1,499	4,983	7,393
1981	137,568	6,525	1,748	5,403	8,884
1982	145,151	6,324	1,939	4,917	8,450
1983	135,447	6,271	2,107	4,075	12,697
1984	126,905	6,534	2,436	3,053	12,070
1985	130,193	7,085	2,742	2,650	12,361
1986	132,948	7,713	2,980	2,539	12,088
1987	133,825	8,351	3,235	2,430	13,533
1988	127,611	7,882	3,506	1,968	9,285
1989	126,955	7,909	3,679	1,780	10,453

Statutory deposits and coin, and Bank of Canada notes are averages of the months in the year shown, the monthly levels are averages of the four consecutive Wednesdays ending with the second last Wednesday of the previous month until January 1981 Effective February 1981, monthly levels are averages of the four consecutive Wednesdays ending with the second Wednesday of the previous month Bank of Canada deposits and secondary reserves are also averages of the months in the year shown; however, the monthly levels are calculated as an average of the juridical days in that month From February 1968 to January 1981 the required primary cash reserve ratios were 12% for Canadian dollar demand deposits and 4% for Canadian dollar notice deposits As of February 1, 1981, the required ratios were 12% for reservable Canadian dollar demand deposits and 4% for Canadian dollar notice deposits plus 2% for the amount by which a bank's reservable Canadian dollar notice deposits exceed $500 million, and 3% for reservable foreign currency deposits. The secondary reserve requirement was set as follows. 8.5% in December 1971, 8% in January 1972, 7% in December 1974 6% in January 1975, 5.5% in March 1975, 5% in February 1977 and 4% in December 1981.

19.4 BANK RATES FROM JULY 25, 1984 TO SEPTEMBER 26, 1990

Date of change	% per annum	Date of change	% per annum	Date of change	% per annum
July 25, 1984	13.24	Aug. 27, 1986	8.58	Sept. 28, 1988	10.54
Aug. 29, 1984	12.39	Sept. 24, 1986	8.63	Oct. 26, 1988	10.51
Sept. 26, 1984	12.28	Oct. 29, 1986	8.62	Nov. 30, 1988	10.84
Oct. 31, 1984	11.71	Nov. 26, 1986	8.47	Dec. 28, 1988	11.17
Nov. 28, 1984	10.78	Dec. 31, 1986	8.49	Jan. 25, 1989	11.54
Dec. 26, 1984	10.16	Jan. 28, 1987	7.74	Feb. 22, 1989	11.70
Jan. 30, 1985	9.66	Feb. 25, 1987	7.59	Mar. 29, 1989	12.40
Feb. 27, 1985	10.95	Mar. 25, 1987	7.14	Apr. 26, 1989	12.61
Mar. 27, 1985	11.18	Apr. 29, 1987	8.26	May 31, 1989	12.40
Apr. 24, 1985	9.75	May 27, 1987	8.54	June 28, 1989	12.31
May 29, 1985	9.59	June 24, 1987	8.59	July 26, 1989	12.32
June 26, 1985	9.57	July 29, 1987	8.76	Aug. 30, 1989	12.40
July 31, 1985	9.31	Aug. 26, 1987	9.24	Sept. 27, 1989	12.47
Aug. 28, 1985	9.20	Sept. 30, 1987	9.57	Oct. 25, 1989	12.43
Sept. 25, 1985	9.31	Oct. 28, 1987	8.26	Nov. 29, 1989	12.47
Oct. 30, 1985	8.77	Nov. 25, 1987	8.48	Dec. 27, 1989	12.47
Nov. 27, 1985	8.98	Dec. 30, 1987	8.68	Jan. 31, 1990	12.29
Dec. 25, 1985	9.49	Jan. 27, 1988	8.63	Feb. 28, 1990	13.25
Jan. 29, 1986	10.33	Feb. 24, 1988	8.58	Mar. 28, 1990	13.38
Feb. 26, 1986	11.84	Mar. 30, 1988	8.78	Apr. 25, 1990	13.77
Mar. 26, 1986	10.44	Apr. 27, 1988	9.06	May 30, 1990	14.05
Apr. 30, 1986	9.27	May 25, 1988	9.12	June 27, 1990	13.90
May 28, 1986	8.43	June 29, 1988	9.44	July 25, 1990	13.59
June 25, 1986	8.84	July 27, 1988	9.53	Aug. 29, 1990	13.01
July 30, 1986	8.63	Aug. 31, 1988	10.03	Sept. 26, 1990	12.61

On March 10, 1980 the Bank of Canada announced that beginning on March 13, 1980 and until further notice, its Bank Rate would be set at 1/4 percentage point above the latest average rate established in the weekly tender for 91-day treasury bills issued by the Government of Canada. The Bank Rates shown in the above tables are as at the last Wednesday of the month.

19.5 BANK OF CANADA NOTE LIABILITIES, AS AT DECEMBER 31, 1985-89 (THOUSAND DOLLARS)

Denomination	1985	1986	1987	1988	1989
Bank of Canada notes					
$1	323,196	335,727	329,776	340,255	195,350
$2	255,218	277,119	299,563	317,654	376,987
$5	511,713	605,308	602,929	725,851	708,192
$10	1,217,986	1,222,061	1,266,451	1,296,739	1,295,574
$20	6,499,277	6,703,465	7,051,609	7,325,716	7,578,850
$25	46	46	46	46	46
$50	2,225,079	2,464,680	2,773,682	3,102,065	3,306,316
$100	4,899,910	5,410,534	6,038,812	6,674,151	7,274,605
$500	24	24	24	24	23
$1,000	726,669	879,448	1,071,611	1,237,059	1,343,758
Total	16,659,118	17,898,486	19,434,533	21,019,560	22,079,701
Chartered banks	8,123	8,123	8,123	8,122	8,122
Dominion of Canada	4,635	4,635	4,635	4,635	4,635
Provinces	28	28	28	28	28
Defunct banks	88	88	88	88	88
Total, Bank of Canada note liabilities	16,671,992	17,911,360	19,447,407	21,032,433	22,092,574
Held by					
Chartered banks	3,370,820	3,692,917	4,004,246	4,428,136	3,073,761
Others	13,301,172	14,218,443	15,443,161	16,604,297	19,018,813

19.6 CUMULATIVE PRODUCTION OF CANADIAN CIRCULATING COINAGE[1], 1987-89 (PIECES)

	1987	1988^{r}	1989
$1 (aureate) Loon	205,405,000^{r}	138,893,539	184,773,902
50¢	373,000	220,000	266,419
25¢	53,408,000	80,368,473	119,624,307
10¢	147,309,000	162,998,558	198,693,414
5¢	106,299,000	75,025,000	141,435,538
1¢	774,549,000^{r}	482,676,752	1,066,628,200

[1] *Up to December 31, 1989; total coins of each date and denomination, regardless of the calendar year in which they were produced.*

19.7 REFINERY OPERATIONS, 1988 AND 1989

	Gross weight (Troy ounces)		Refined gold (9999) produced (Troy ounces)		Refined silver (999) produced (Troy ounces)[1]	
	1988	1989	1988	1989	1988	1989
Deposits from Canadian mines						
Newfoundland	92,744	107,951	71,291	81,207	7,989	6,019
Nova Scotia	7,919	11,129	6,555	9,488	266	312
Quebec	1,334,415	1,327,698	1,060,699	979,561	187,703	257,561
Ontario	1,183,145	1,780,579	1,006,297	1,553,651	114,002	155,471
Manitoba	23,991	33,243	16,499	26,867	1,511	2,659
Saskatchewan	53,489	98,366	44,706	88,225	3,722	3,882
British Columbia	322,190	260,758	188,105	126,341	113,647	111,883
Northwest Territories	411,973	426,678	334,638	325,201	66,236	88,817
Yukon	350	52,697	278	46,177	62	4,379
Total	3,430,216	4,099,099	2,729,068	3,236,718	495,138	630,983
Deposits from all external sources						
Total	1,084,283	489,227	880,382	362,599	126,521	79,497
Total	4,514,499	4,588,326	3,609,450	3,599,317	621,659	710,480

[1] *These figures refer only to the silver produced as a byproduct of the refining of gold.*

19.8 TOTAL CANADIAN-OWNED CHARTERED BANKS, CONSOLIDATED STATEMENT OF REVENUE AND EXPENSE, 1985-89 (MILLION DOLLARS)

Item	Financial years ending in				
	1985[1]	1986	1987	1988	1989
Interest income					
Loans, excluding leases	30,429.9	30,251.3	28,720.8	33,549.4	41,222.2
Lease financing	228.7	258.8	268.8	347.0	435.8
Securities	3,570.5	3,640.3	3,766.3	3,679.0	5,070.2
Deposits with banks	4,579.7	3,568.9	3,181.4	2,668.9	2,942.4
Total, including dividends	38,808.8	37,719.3	35,937.3	40,244.3	49,670.6
Interest expense					
Deposits	27,926.5	25,656.8	23,722.1	26,130.1	33,876.5
Bank debentures	536.6	598.9	534.6	525.2	785.0
Liabilities other than deposits	255.7	501.9	211.3	412.4	854.7
Total	28,718.8	26,757.6	24,468.0	27,067.7	35,516.2
Net interest income	10,090.0	10,961.7	11,469.3	13,176.6	14,154.4
Less provision for loan losses	−2,339.8	−2,996.2	−2,722.5	−2,524.5	−5,107.8
Net interest income after provision for loan losses	7,750.2	7,965.5	8,696.8	10,652.1	9,046.6
Other income	3,135.4	3,600.7	4,511.5	5,240.1	5,920.5
Net interest and other income	10,885.6	11,566.2	13,208.3	15,892.2	14,967.1
Non-interest expense					
Salaries	4,321.4	4,596.6	4,873.6	5,486.6	6,248.3
Pension contribution and other staff benefits	381.4	344.9	373.9	493.0	536.7
Premises and equipment, including depreciation	1,462.9	1,605.6	1,721.2	1,957.0	2,211.1
Other	1,749.7	2,029.0	2,253.8	2,418.1	2,805.3
Total	7,915.4	8,576.1	9,222.5	10,354.7	11,801.4
Net income before provision for income taxes	2,970.2	2,990.1	3,985.8	5,537.3	3,165.7
Provision for income taxes	−860.7	−854.4	−1,438.4	−2,229.9	−1,110.5
Net income before minority interest in subsidiaries and extraordinary items	2,109.5	2,135.7	2,547.4	3,307.4	2,055.2
Minority interest in subsidiaries	−8.8	−10.8	−12.5	−20.3	28.8
Extraordinary items	5.7	−63.4	2.0	1.3	5.2
Special provision for losses on transborder claims	—	—	−3,480.9	—	—
Net income	2,106.4	2,061.5	−944.0	3,288.4	2,031.6

[1] *Excludes the Canadian Commercial Bank and Northland Bank.*

Note: Since 1965 all chartered banks have ended their years on October 31. The consolidated statements of revenue and expense and of shareholders' equity and appropriations for contingencies are based on the format prescribed in Schedules L, M and N of the 1980 Bank Act. The operations of all majority-owned subsidiaries are fully consolidated into income with the minority interest shown separately. Where a bank holds at least 20% but not more than 50% of a company's voting shares, the bank takes into its income an amount equivalent to its share of that company's earnings.

19.9 TOTAL CANADIAN-OWNED CHARTERED BANKS, STATEMENT OF SHAREHOLDERS' EQUITY AND APPROPRIATIONS FOR CONTINGENCIES, 1985-89 (MILLION DOLLARS)

Item	Financial years ending in				
	1985[1]	1986	1987	1988	1989
Shareholders' equity					
Capital stock					
Balance at beginning of year	5,690.9	7,288.6	8,864.7	11,155.4	12,064.6
Changes in capital stock					
Common shares	760.5	1,216.6	1,875.5	1,173.2	649.5
Preferred shares	51.1	252.7	−125.7	−263.9	876.2
Transfer from (to) contributed surplus	922.1	—	544.2	—	—
Balance at end of year	7,424.6	8,757.9	11,168.7	12,064.7	13,590.3
Contributed surplus					
Balance at beginning of year	1,116.5	365.2	475.2		
Additions from capital stock issue	182.9	110.2	79.8		..
Transfer from (to) capital stock	−922.1	—	−554.2	..	..
Transfer from retained earnings	—	−0.2	—	..	..
Balance at end of year	377.3	475.2	0.8	..	..
Retained earnings					
Balance at beginning of year	8,007.0	8,998.3	9,867.1	7,671.4	10,400.8
Prior period adjustments	−11.8	—	−13.5	—	−33.1
Net unrealized foreign exchange translation gain (loss)	45.8	17.8	−135.9	−146.6	−165.6
Share issue expenses, net	−6.3	−16.3	−37.0	−0.7	−19.9
Net income (loss) for year	2,106.4	2,061.5	−944.0	3,288.4	2,031.6
Dividends					
Common	−695.5	−771.9	−1,058.3	−1,028.3	−1,232.5
Preferred	−292.3	−282.3	−264.7	−258.7	−267.5
Other	—	3.1	50.8	−1.1	—
Transfer from (to) appropriations for contingencies	−471.9	−562.2	444.4	1,567.3	—
Income taxes related to above transfer	356.5	305.6	−239.9	−690.9	—
Transfer from (to) general reserve	—	—	—	—	—
Transfer from contributed surplus	—	—	—	—	—
Balance at end of year	9,037.9	9,753.6	7,669.0	8,140.7	11,946.3
Total shareholders' equity at end of year	16,839.8	18,986.7	18,838.5	22,465.4	24,304.1
Appropriations for contingencies					
Balance at beginning of year	1,001.2	1,195.7	1,256.6	1,567.3	
Net loss experience on loans	−2,603.3	−3,530.6	−1,964.9	—	..
Provision for loan losses	2,339.8	2,996.2	2,772.7	—	..
Transfer from (to) retained earnings	471.9	562.2	−444.4	−1,567.3	..
Deferred income taxes	—	6.5	−53.9	—	..
Balance at end of year	1,209.6	1,230.1	1,566.1	—	..
Total shareholders' equity and appropriations for contingencies	18,049.4	20,216.8	20,404.6	22,465.4	24,304.1

[1] *Excludes the Canadian Commercial Bank and Northland Bank.*

See note, Table 19.8.

19.10 FINANCIAL AND OPERATIONAL RESULTS OF THE FEDERAL BUSINESS DEVELOPMENT BANK, 1986-90

Operational statistics	1986	1987	1988	1989	1990
Authorized loans and guarantees					
Number	4,203	5,685	5,549	5,130	5,602
Amount ($'000)	719,594	927,914	861,962	926,727	903,902
Authorized investments					
Number	22	19	32	14	13
Amount ($'000)	12,525	20,232	22,514	4,712	11,637
Number of clients (loans and guarantees) to March 31	17,445	16,350	15,769	15,327	15,541
Number of clients (investments) to March 31	54	46	65	56	44
Amount in circulation or committed to March 31 (loans and guarantees) ($'000)	1,842,769	2,137,508	2,360,813	2,641,388	2,672,009
Amount in circulation or committed to March 31 (investments) ($'000)	41,346	47,132	61,804	58,832	47,442
CASE (Counselling Assistance to Small Enterprises)					
Files processed	10,210	9,500	8,894	8,937	10,219
Consultation days	18,602	18,224	18,494	17,022	17,583
Management training seminars					
Number	2,119	2,114	1,926	1,242	1,232
Participants	36,205	33,658	30,480	19,519	20,748
Managment workshops					
Number	647	792	993	911	1,225
Participants	25,391	32,635	33,960	27,190	33,948

19.11 REVENUES AND EXPENSES OF TRUST AND MORTGAGE LOAN COMPANIES, 1987-89 (MILLION DOLLARS)

Item	Trust companies			Mortgage companies		
	1987	1988	1989	1987	1988	1989
Revenues						
Interest earned	8,087	9,402	11,999	6,716	9,052	12,029
Dividends	557	643	441	23	47	43
Fees and commissions	994	1,255	1,288	15	19	22
Other revenues	292	267	431	169	140	167
Total, revenues	9,930	11,567	14,159	6,923	9,258	12,261
Expenses						
Interest	6,918	8,066	10,531	5,386	7,326	10,188
Depreciation	75	99	126	4	4	4
Amortization	4	13	15	34	28	33
Income taxes	106	135	110	184	214	185
Other expenses	2,184	2,476	2,790	1,091	1,327	1,392
Total, expenses	9,287	10,789	13,572	6,699	8,899	11,802
Net profit	643	778	587	224	359	459

19.12 ASSETS, LIABILITIES AND SHAREHOLDERS' EQUITY OF TRUST COMPANIES, 1987-89 (MILLION DOLLARS)

Item	1987	1988	1989
Assets			
Cash and demand deposits			
Chartered banks			
Canadian currency	1,443	1,447	1,548
Foreign currency	97	220	158
Branches of Canadian banks outside Canada	—	—	—
Other institutions in Canada and outside Canada	28	6	69
Investments in Canada			
Term deposits			
Swapped deposits	392	150	26
Chartered banks			
Canadian currency	759	1,198	651
Foreign currency	423	264	25
Other institutions	414	415	274
Short-term bills and notes			
Canada treasury bills	1,687	3,410	5,322
Provincial treasury bills and notes	598	810	596
Municipal notes	4	15	18
Sales finance companies' notes	54	118	64
Commercial paper	1,663	3,161	4,660
Long-term bonds, debentures and notes			
Canada	1,933	1,304	1,115
Provincial	1,002	978	534
Municipal	398	338	177
Corporation	2,509r	2,868	2,429
Investment in units of real estate investment trusts	8	—	—
Corporation shares	5,113	4,814	5,496
Investment in subsidiaries			
Shares	778	855	1,012
Advances	1,116	1,159	566
Other investments in Canada	33	4	93
Investments outside Canada			
Corporation shares	63	20	19
Other	235	246	225
Loans			
Mortgages			
National Housing Act	9,675	10,263	11,075
Conventional			
Residential	37,154	44,788	53,405
Non-residential	9,043	10,718	12,582
Personal	5,555r	6,718	8,033
Collateral business loans	4,433r	4,545	4,610
Other loans	244	252	492
Lease contracts	1,159	1,595	1,922
Assets (concluded)			
Accounts receivable and accruals	953	1,630	1,197
Fixed assets, held for own use or for income	372	547	582
Real estate held for sale	286	118	151
Other assets	336	505	622
Total, assets	89,958	105,479	119,798
Liabilities and shareholders' equity			
Savings deposits			
Chequing	8,652	9,509	11,155
Non-chequing	8,404	12,101	12,809
For RRSP	2,341	1,946	2,278
Other tax shelters	84	98	126
Term deposits with original term of			
Less than one year	7,319	8,950	10,125
One to five years	36,207	40,737	46,081
Over five years	168	152	169
For RRSP purposes	16,399	19,269	22,661
For RHOSP purposes			
Other tax shelters	900	1,375	1,624
Bank loans			
Chartered banks	214	397	415
Banks outside Canada	—	—	—
Accounts payable	2,591	3,284	3,899
Income tax payable	−23	84	18
Owing to parent and affiliated Canadian companies	793	618	575
Other notes and loans payable	817	443	187
Deferred income	81	95	104
Mortgages payable	17	32	30
Deferred income taxes	266	187	172
Other liabilities	423	1,035	1,368
Shareholders' equity			
Share capital			
Preferred	614	619	602
Common	1,382	1,570	1,856
Contributed surplus	1,008	1,206	1,674
Reserves	512	316	314
Retained earnings	790	1,456	1,556
Total, liabilities and shareholders' equity	89,958	105,479	119,798

19.13 ASSETS, LIABILITIES AND SHAREHOLDERS' EQUITY OF MORTGAGE LOAN COMPANIES, 1987-89 (MILLION DOLLARS)

Item	1987	1988	1989
Assets			
Cash and demand deposits			
Chartered banks			
Canadian currency	257	484	790
Foreign currency	1	1	2
Other institutions in Canada and outside Canada	1	15	4
Investments in Canada			
Term deposits			
Chartered banks			
Canadian currency	628	1,276	1,431
Foreign currency (including swapped deposits)	12	13	17
Other institutions	32	12	16
Short-term bills and notes			
Canada treasury bills	3,017	3,504	3,570
Provincial treasury bills and notes	296	817	1,574
Municipal notes	—	—	—
Sales finance companies' notes	9	—	—
Commercial paper	112	1,024	1,395
Long-term bonds, debentures and notes			
Canada	637	340	262
Provincial	81	131	242
Municipal	..	—	—
Corporation	374	399	434
Investment in units of real estate investment trusts	—	—	—
Corporation shares	357	497	488
Investment in subsidiaries			
Shares	234	204	232
Advances	56	101	1,697
Other investments in Canada	1	14	—
Investments outside Canada			
Corporation shares	—	—	—
Other Loans	1	—	—
Mortgages			
National Housing Act	14,793	17,741	19,859
Conventional			
Residential	44,514	54,473	68,184
Non-residential	5,011	5,698	6,785
Personal	4,143	4,291	6,950
Collateral business loans	1,831	1,679	1,876
Other loans	37	38	62
Lease contracts	10	29	142
Accounts receivable and accruals	787	934	1,260
Fixed assets	48	43	44
Real estate held for sale	42	35	32
Other assets	140	153	169
Total, assets	77,460	93,946	117,517

Item	1987	1988	1989
Liabilities			
Demand deposits			
Chequing	13,137[r]	20,982	31,499
Non-chequing	4,757[r]	6,962	9,626
For RRSP	83	124	184
For RHOSP			
Other tax shelters	—	—	—
Term deposits with original term of			
Less than one year	2,303	2,876	3,605
One to five years	35,852	44,584	53,878
Over five years	12	8	6
For RRSP	193	277	409
For RHOSP			
Other tax shelters	8	55	363
Bank loans			
Chartered banks			
Canadian currency	21	18	48
Foreign currency	1	—	—
Banks outside Canada	—	—	—
Other notes and loans payable			
Promissory notes			
Less than one year	1,064	1,692	1,770
One year or more	1,696	1,821	1,726
Other	1,633	1,081	704
Accounts payable and accruals	1,689	2,063	2,847
Income taxes	25	39	−39
Owing to parent and affiliated companies			
In Canada	10,553	6,347	4,687
Outside Canada	164	164	100
Debentures issued under trust indenture	561	513	552
Deferred income	82	73	77
Mortgages payable	—	8	5
Deferred income taxes	282	301	288
Other liabilities	140	81	90
Shareholders' equity			
Share capital			
Preferred	583	786	1,035
Common	1,722	1,836	2,247
Contributed surplus	484	488	719
Reserves	95	44	43
Retained earnings	323	723	1,048
Total, liabilities and shareholders' equity	77,460	93,946	111,517

19.14 LOCAL CREDIT UNIONS IN CANADA, 1979-89

Year	Credit unions chartered	Assets $'000	Loans granted to members $'000
1979	3,665	26,671,497	20,231,595
1980	3,595	29,763,317	22,344,082
1981	3,448	31,657,404	23,716,793
1982		33,526,991	23,595,627
1983		37,110,568	27,565,656
1984		40,624,882	30,618,746
1985	3,125	44,045,039	33,768,244
1986	3,072	48,780,160	37,523,834
1987	2,975	55,060,268	43,362,991
1988	2,987	61,106,287	48,017,904
1989	2,980	67,091,742	51,670,624

19.15 ASSETS, LIABILITIES AND MEMBERS' EQUITY OF LOCAL CREDIT UNIONS IN CANADA, 1987-89 (MILLION DOLLARS)

Item	1987	1988	1989
Assets			
Cash and demand deposits			
On hand	824	1,012	978
In banks	72	137	64
In centrals	3,376	3,749	4,483
Other	95	67	114
Investments			
Term deposits	4,624	4,995	6,110
Government of Canada	126	250	371
Provincial governments	53	50	49
Municipal governments	111	110	142
Shares in centrals	393	430	439
Other	699	751	974
Loans			
Cash loans			
Personal	9,206	10,209	10,964
Farm	1,228	1,301	1,466
Co-operatives and other enterprises	4,203	5,181	5,738
Other	659	673	677
Mortgage loans			
Dwellings	24,454	26,795	29,027
Farm	1,259	1,311	1,233
Co-operatives and other enterprises	1,957	2,127	2,380
Other	395	421	186
Allowance for doubtful loans	−293	−252	−272
Fixed assets			
Land, buildings, equipment and furniture	795	920	1,004
Assets (concluded)			
Stabilization fund deposits	68	54	17
Other assets	754	816	948
Total, assets	55,060	61,107	67,092
Liabilities			
Accounts payable			
Interest	1,142	1,323	1,720
Dividends	8	10	16
Other	134	248	231
Loans payable			
Centrals	2,058	2,275	1,872
Banks	63	46	5
Other	760	820	830
Deposits			
Demand	20,779	22,179	24,213
Term	26,149	29,955	33,551
Other liabilities	320	321	371
Members' equity			
Share capital	2,450	2,464	2,121
Reserves	1,189	1,433	1,729
Undivided surplus	8	33	433
Total, liabilities and members' equity	55,060	61,107	67,092

19.16 LIFE INSURANCE EFFECTED AND IN FORCE IN CANADA BY INSURANCE COMPANIES UNDER FEDERAL REGISTRATION, SELECTED YEARS, 1880-1989 (MILLION DOLLARS)

Year	New insurance effected during year	Amounts in force December 31			
		Canadian	British	Foreign	Total
1880	14	38	20	34	91
1900	68	267	39	124	431
1920	630	1,664	77	916	2,657
1940	590	4,609	146	2,221	6,975
1960	5,693	30,418	1,555	12,676	44,649
1970	12,915	76,775	5,727	28,615	111,116
1975	32,526	151,974	10,476	45,629	208,079
1980	57,332	309,454	20,465	73,128	403,047
1981	70,818	358,087	24,182	83,299	465,568
1982	85,468	394,822	27,348	90,332	512,502
1983	94,299	445,858	27,013	95,565	568,436
1984	98,103	496,595	29,353	105,019	630,967
1985	108,226	551,321	31,104	106,558	688,983
1986	122,730	611,870	29,265	121,892	763,027
1987	124,905	671,621	31,568	124,842	828,031
1988	135,962	663,877	35,862	140,007	839,747
1989	146,373	727,170	39,443	151,134	917,747

Policies (ordinary and group life)	1986			1987		
	Canadian	British	Foreign	Canadian	British	Foreign
Effected during year						
Ordinary[1]	55,854	3,621	13,420	59,640	5,990	14,429
Group	43,281	1,084	5,470	36,382	1,139	7,325
In force December 31						
Ordinary[1]	256,289	19,984	63,471	284,931	22,426	66,711
Group	355,581	9,281	58,421	386,690	9,142	58,131
	1988			1989		
Effected during year						
Ordinary[1]	61,387	4,353	21,796	63,139	4,894	20,131
Group	39,271	2,416	6,739	44,278	1,807	12,124
In force December 31						
Ordinary[1]	313,621	23,009	77,412	347,009	25,628	84,602
Group	350,256	12,853	62,595	380,161	13,815	66,532

[1] *Includes industrial policies.*

19.17 LIFE INSURANCE PREMIUMS (DIRECT WRITTEN), 1986-89 (MILLION DOLLARS)

Province or territory	1986				1987			
	Life			Accident and sickness total	Life			Accident and sickness total
	Ordinary[1]	Group	Total		Ordinary[1]	Group	Total	
Newfoundland	38	23	61	48	42	23	65	53
Prince Edward Island	12	5	17	7	14	5	19	8
Nova Scotia	99	43	142	81	108	45	153	89
New Brunswick	76	47	123	57	83	57	140	65
Quebec	810	365	1,175	579	854	387	1,241	588
Ontario	1,273	596	1,869	1,452	1,443	672	2,115	1,654
Manitoba	124	60	184	91	135	64	199	101
Saskatchewan	105	50	155	63	115	51	166	71
Alberta	318	136	454	261	356	140	496	285
British Columbia	306	143	449	279	339	147	486	304
Yukon and Northwest Territories	5	1	6	6	5	2	7	6
Miscellaneous	31	4	35	10	20	16	36	−2
Total	3,197	1,473	4,670	2,934	3,514	1,609	5,123	3,222
	1988				1989			
Newfoundland	47	23	70	62	51	25	76	69
Prince Edward Island	16	6	21	10	17	6	23	13
Nova Scotia	117	48	165	105	124	56	180	115
New Brunswick	89	59	149	74	96	51	148	87
Quebec	896	390	1,286	633	949	342	1,290	746
Ontario	1,587	676	2,263	1,846	1,720	782	2,502	2,054
Manitoba	146	61	208	116	153	67	220	120
Saskatchewan	124	49	173	77	131	53	184	81
Alberta	378	138	516	327	406	158	563	372
British Columbia	377	143	520	355	415	160	574	390
Yukon and Northwest Territories	6	2	7	8	6	3	8	9
Miscellaneous	21	20	41	7	51	10	61	2
Total	3,804	1,616	5,420	3,618	4,119	1,711	5,830	4,059

[1] *Includes industrial policies.*

19.18 MAJOR ITEMS OF INCOME AND EXPENDITURE OF FEDERALLY REGISTERED LIFE INSURANCE COMPANIES, 1987-89 (MILLION DOLLARS)

Income and expenditure	1987 Life			1988 Life			1989 Life		
	Canadian	British[1]	Foreign[1]	Canadian	British[1]	Foreign[1]	Canadian	British[1]	Foreign[1]
Income									
Insurance premiums and annuity considerations	19,771[2]	1,176	1,240[2]	19,494[2]	1,200	1,435	19,902[2]	1,107	1,584
Investment income — regular funds	8,909	657	815	9,943	723	938	11,076	821	1,017
Net investment gain — segregated funds	910	5	6	1,566	123	41	2,503	157	80
Other items	613	155	163	223	83	147	451	117	171
Total income	30,203	1,993	2,224	31,226	2,130	2,561	33,931	2,202	2,852
Selected expenditure									
Claims incurred	11,832	924	771	11,876	708	856	13,622	882	947
Dividends to policyholders	1,282	65	242	1,429	67	235	1,524	67	271
Commissions and general expenses	3,187	222	395	3,502	239	421	3,596	242	442
Taxes, licences and fees	155[3]	23	30	180[3]	24	35	177[3]	26	38

19.18 MAJOR ITEMS OF INCOME AND EXPENDITURE OF FEDERALLY REGISTERED LIFE INSURANCE COMPANIES, 1987-89 (MILLION DOLLARS) (concluded)

Income and expenditure	1987 Accident and sickness			1988 Accident and sickness			1989 Accident and sickness		
	Canadian	British[1]	Foreign[1]	Canadian	British[1]	Foreign[1]	Canadian	British[1]	Foreign[1]
Income									
Insurance premiums and annuity considerations	3,444	57	510	3,843	81	590	4,078	89	685
Investment income — regular funds	521	13	108	541	17	107	604	23	124
Net investment gain — segregated funds	—	—	—	—			—		
Other items	17	1	25	22	—	11	25	1	8
Total income	3,982	71	643	4,407	98	708	4,707	114	816
Selected expenditure									
Claims incurred	2,799	37	363	3,115	58	387	3,070	64	459
Dividends to policyholders	49	—	8	79	1	8	134	1	18
Commissions and general expenses	567	12	154	676	20	172	763	24	188
Taxes, licences and fees	74	1	11	84	1	13	92	2	17

[1] *Business in Canada only.*

[2] *Worldwide business of which $8,730 million in 1987, $7,996 million in 1988 and $7,470 million in 1989 was applicable to out-of-Canada business.*

[3] *Excludes income taxes.*

19.19 PROPERTY AND CASUALTY NET PREMIUMS WRITTEN AND NET CLAIMS INCURRED, BY CLASS OF INSURANCE AND BY INCORPORATION OF COMPANY, 1986-89 (MILLION DOLLARS)

Year and insurance class	Net premiums written				Net claims incurred[1]
	Canadian	British	Foreign	Total	
1986					
Property[2]	2,184	298	778	3,260	1,808
Automobile	3,255	222	1,030	4,507	3,773
Liability	648	98	405	1,151	765
Accident and sickness	145	66	28	239	154
Other casualty[3]	221	49	95	365	141
Marine	38	7	24	69	40
Total	6,491	740	2,360	9,591	6,681
1987					
Property[2]	2,358	305	830	3,493	2,091
Automobile	3,615	234	1,132	4,981	4,323
Liability	704	91	435	1,230	876
Accident and sickness	142	76	2	220	140
Other casualty[3]	266	64	108	438	151
Marine	39	10	27	76	46
Total	7,124	780	2,534	10,438	7,627
1988					
Property[2]	2,540	332	752	3,624	2,115
Automobile	4,052	249	1,111	5,411	4,929
Liability	726	93	382	1,201	757
Accident and sickness	99	75	7	181	91
Other casualty[3]	282	11	120	413	162
Marine	42	60	28	130	53
Total	7,741	820	2,400	10,961	8,107

19.19 PROPERTY AND CASUALTY NET PREMIUMS WRITTEN AND NET CLAIMS INCURRED, BY CLASS OF INSURANCE AND BY INCORPORATION OF COMPANY, 1986-89 (MILLION DOLLARS) (concluded)

Year and insurance class	Net premiums written				Net claims incurred[1]
	Canadian	British	Foreign	Total	
1989					
Property[2]	2,602	329	758	3,689	2,356
Automobile	4,380	273	1,116	5,770	5,403
Liability	725	94	373	1,191	758
Accident and sickness	166	70	7	244	140
Other casualty[3]	288	63	106	456	243
Marine	47	11	24	83	61
Total	8,208	840	2,384	11,433	8,962

[1] *Includes adjustment expenses.*

[2] *Includes fire, personal property, real property, windstorm, earthquake, inland transportation, livestock, theft, forgery, plate glass.*

[3] *Includes bail, fidelity, surety, boiler and machinery, aircraft, credit, legal expenses, mortgage.*

19.20 PROPERTY AND CASUALTY DIRECT PREMIUMS WRITTEN AND CLAIMS INCURRED, 1988 AND 1989 (MILLION DOLLARS)

Year and province or territory	Federally registered companies	
	Direct premiums written	Direct claims incurred
1988		
Newfoundland	134	81
Prince Edward Island	49	33
Nova Scotia	362	255
New Brunswick	315	216
Quebec	2,381	1,564
Ontario	5,806	4,553
Manitoba	216	119
Saskatchewan	166	115
Alberta	1,133	872
British Columbia	741	449
Yukon and Northwest Territories	39	23
Canada	11,341	8,280
1989		
Newfoundland	132	96
Prince Edward Island	56	43
Nova Scotia	374	286
New Brunswick	320	272
Quebec	2,370	1,728
Ontario	6,208	4,929
Manitoba	217	134
Saskatchewan	173	143
Alberta	1,174	911
British Columbia	755	600
Yukon and Northwest Territories	43	21
Canada	11,821	9,163

19.21 PROPERTY AND CASUALTY INSURANCE, UNDERWRITING RESULTS IN CANADA, 1986-89, WITH TOTALS FOR 1982-89 (MILLION DOLLARS)

Registered companies	Underwriting revenue	Claims[1] incurred	Expenses incurred	Dividends to policyholders	Underwriting income
1986					
Canadian[2]	5,935.6	4,555.9	1,882.7	8.8	−511.6
British	76.0	698.0	383.3	238.6	—
Foreign	2,239.8	1,725.0	635.1	1.5	−121.9
1987					
Canadian[2]	6,849.2	5,134.6	2,118.7	10.5	−414.5
British	763.9	544.6	282.4	—	−63.1
Foreign	2,476.5	1,923.9	694.4	5.7	−147.5
1988					
Canadian[2]	7,421.1	5,700.2	2,372.7	9.7	−661.5
British	785.6	447.3	274.6	—	63.7
Foreign	2,458.6	1,934.7	700.0	−4.0	−172.1
1989					
Canadian[2]	7,929.4	6,335.1	2,535.1	8.9	−949.7
British	798.6	575.8	279.2	—	−56.4
Foreign	2,313.8	2,026.4	705.1	2.4	−420.1
Total, 1989	11,041.9	8,937.3	3,519.5	11.3	1,426.2
1988	10,665.3	8,082.2	3,347.4	5.6	−769.9
1987	10,089.6	7,603.1	3,095.5	16.2	−625.1
1986	8,873.4	6,664.2	2,756.4	10.3	−557.5
1985	7,368.5	6,196.0	2,460.1	14.9	−1,302.5
1984	6,776.6	5,396.7	2,318.1	8.8	−947.0
1983	6,481.4	4,652.6	2,170.5	23.8	−365.5
1982	5,818.9	4,382.2	1,918.9	13.9	−496.1

[1] *Includes adjustment expenses.*

[2] *Excludes transactions out of Canada.*

19.22 ESTIMATED LIABILITIES[1] OF BANKRUPTCIES, 1986-89 (THOUSAND DOLLARS)

Province or territory	1986	1987	1988	1989
Newfoundland	4,145.0	9,125.3	11,475.0	18,261.1
Nova Scotia	27,250.3	32,347.5	49,922.7	82,590.6
Prince Edward Island	1,626.0	4,876.0	5,990.6	2,179.2
New Brunswick	9,838.0	7,615.9	28,171.4	24,151.5
Quebec	451,937.9	458,776.3	967,749.2	1,435,071.3
Ontario	370,711.0	362,209.9	593,548.3	751,951.7
Manitoba	32,240.6	32,063.4	62,738.2	152,133.5
Saskatchewan	59,160.6	55,323.1	116,804.8	132,677.9
Alberta	459,858.1	449,505.7	1,452,835.5	346,259.1
British Columbia	526,336.1	365,496.1	448,103.0	423,283.9
Yukon	676.0	191.6	5,233.4	848.9
Northwest Territories	657.0	3,707.5	909.7	611.4
Canada	1,944,436.6	1,781,238.3	3,743,481.9	3,370,020.1

[1] *Estimated by debtors and therefore to be accepted with reservations.*

19.23 BUSINESS BANKRUPTCIES, BY INDUSTRY, 1989

Industry	Number of cases	Total assets $	Total liabilities $	Total deficiency $
Primary industries	600	64,486,492	139,266,187	74,779,695
Manufacturing				
Food and beverages	43	1,753,373	8,056,994	6,303,621
Textiles	20	13,804,418	17,721,117	3,916,699
Clothing (including knitting mills)	70	15,080,455	26,874,449	11,793,994
Wood (including furniture)	152	51,750,564	94,447,442	42,696,878
Paper and allied industries (including printing and publishing)	98	15,633,632	30,988,770	15,355,138
Primary and fabricated metal	73	39,403,941	60,074,290	20,670,349
Machinery	27	3,284,616	10,191,671	6,907,055
Transportation, equipment	43	11,106,464	32,666,662	21,560,198
Electrical products	38	37,876,345	52,276,661	14,400,316
Non-metallic mineral products	22	6,929,884	11,851,189	4,921,305
Chemical	25	2,776,414	7,424,739	4,648,325
Other manufacturing industries	80	8,255,990	25,509,518	17,253,528
Total, all manufacturing	1,291	272,142,588	517,349,689	245,207,101
Construction industries				
General contractors	382	31,926,360	87,954,841	56,028,481
Special trade contractors	893	49,598,450	183,803,083	134,204,633
Total, all construction	1,275	81,524,810	271,757,924	190,233,114
Transportation, communications and other utilities	575	22,416,184	70,747,599	48,331,415
Trade				
Food	483	34,091,238	84,781,896	50,690,658
General merchandise	63	2,840,602	6,983,630	4,143,028
Automotive products and machinery	682	49,703,433	131,786,282	82,082,849
Apparel and shoes	354	48,579,490	90,047,471	41,467,981
Hardware	26	1,002,074	2,905,658	1,903,584
Household furniture and appliances	177	10,158,691	33,909,927	23,751,236
Other trades	868	37,249,700	122,577,773	85,328,073
Total, all trade	3,228	206,041,412	543,740,236	337,698,824
Finance, insurance and real estate	299	54,312,425	272,731,214	218,400,789
Services				
Education, health and welfare	157	12,619,743	55,229,488	42,609,745
Recreational services	184	5,938,548	41,327,852	35,389,304
Business services	548	35,093,000	229,883,334	194,790,334
Personal services	290	6,385,319	29,540,422	23,155,103
Other services	1,392	99,673,131	237,442,052	137,768,921
Total, all services	2,870	214,022,166	866,136,362	652,114,196
Total, all industries	8,664	773,730,976	2,198,984,211	1,425,253,235

19.24 TOTAL CONSUMER BANKRUPTCIES REPORTED, CALENDAR YEARS, 1988 AND 1989

Year and province or territory	Total estates	Total assets $	Total liabilities $	Total deficiency $
1988				
Newfoundland	216	896,110	2,858,216	1,962,106
Prince Edward Island	1,045	7,064,299	21,049,533	13,985,234
Nova Scotia	51	142,864	891,408	748,544
New Brunswick	246	1,529,944	8,515,539	6,985,595
Quebec	9,779	49,645,756	227,771,917	178,126,161
Ontario	7,516	41,360,605	196,047,491	154,686,886
Manitoba	1,076	11,200,713	25,945,746	14,745,033
Saskatchewan	775	16,372,036	29,370,168	12,998,132
Alberta	2,546	42,613,339	79,399,535	36,786,196
British Columbia	2,552	23,997,359	97,803,480	73,806,121
Yukon	6	19,650	236,788	217,138
Northwest Territories	9	13,856	237,137	223,281
Canada	25,817	194,856,531	690,126,958	495,270,427
1989				
Newfoundland	255	2,926,808	4,759,967	1,833,159
Prince Edward Island	1,137	16,795,515	31,814,933	15,019,418
Nova Scotia	27	186,004	707,059	521,055
New Brunswick	269	3,996,510	6,798,724	2,802,214
Quebec	11,154	108,466,522	292,701,591	184,235,069
Ontario	8,902	76,755,309	266,995,359	190,240,050
Manitoba	1,419	31,885,301	39,227,620	7,342,319
Saskatchewan	1,013	37,973,710	46,926,627	8,952,917
Alberta	2,608	59,783,995	64,170,333	4,386,338
British Columbia	2,405	24,759,343	95,009,512	70,250,169
Yukon	8	27,260	115,529	88,269
Northwest Territories	5	31,011	647,967	616,956
Canada	29,202	363,587,288	849,875,221	486,287,933

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E.A. Weir/National Archives of Canada/C-29837

Chapter 20

ECONOMIC PERSPECTIVES

20.1 INTRODUCTION

FOLLOWING THE 1981-82 RECESSION, the 1980s were a period of sustained economic expansion in Canada. This boom ended in 1990, although growth in real Gross Domestic Product (GDP) had already slowed to 3% in 1989, the lowest increase since 1981-82. An anaemic US economy coupled with a downturn in consumer and business spending in Canada led by mid-1990 to GDP declines and a sharply rising unemployment rate.

The most traumatic of Canada's recessions was the Great Depression of the 1930s. Since the end of World War II, there have been nine recessions. However, with the many changes in the structure of Canada's economy, economic declines like that of the 1930s are now extremely unlikely.

Comprehensive data on Canada's national accounts are available from 1926 onwards. After a brief comparison of Canada's economy 60 years ago and today, this chapter reviews economic conditions in 1990.

20.2 THE CANADIAN ECONOMY — FROM THE 1920s TO THE 1990s

At the close of the 1920s, Canada was on the verge of the Great Depression, partly because the economy was much more prone to a boom-bust cycle than it is today. For example, the gold standard and a policy of fixed exchange rates meant a rigid monetary policy. In the absence of market regulations and margin requirements, the financial industry was unstable; there was also little protection for incomes.

The structure of economic output also made for a volatile economy. For example, agriculture was the second largest industry in 1928, accounting for 16% of total output and over 30% of employment, compared to only about 4% in today's more service-oriented economy. Consequently, a 25% drop in farm output in 1929 left the economy vulnerable to the shock of the stock market crash later in the year.

By mid-1929, industrial production in North America had already begun to decline. The stock market crash, which followed a five-year speculative period that raised prices by 300%, amplified the combined weakness of agriculture and industry.

From 1929 to 1933, total output shrank by 30%; the 1929 level was not reached again until 1939. Business investment fell by 80%, reversing the surge from 1926 to 1929 that led to excessive overcapacity. Business investment did not reach pre-Depression levels until 1947.

Unemployment during this period rose to 20%; no region or sector of the economy was spared. Across the country, output, demand and incomes contracted sharply. A similar collapse afflicted all major industrial nations as prices declined, bank failures rose and trade shrank.

Travel Manitoba

A symbol of economic development and progress in Canada, Manitoba's Golden Boy stands atop the dome of the Manitoba Legislative Buildings.

THE GOLDEN BOY

High atop the Manitoba legislative building — 78 metres(m) (255 feet) to be precise — stands the Golden Boy, a gilded bronze statue of a runner holding a torch aloft in one hand and a sheaf of wheat in the other. Almost 5 m (16 feet) high, the statue was cast by the French sculptor Charles Gardet and hoisted on top of the Winnipeg landmark on November 21, 1919, but only after surviving a series of near catastrophes. The statue barely missed being bombed in the foundry in France where it was cast during World War I, and inadvertently spent much of the war in the hold of a troop ship that spent several years plying the submarine-infested waters of the Atlantic, the North Sea, the English Channel and the Mediterranean before finally landing safely in New York.

The bronze statue was gold-plated in 1951 and the torch was electrically lit in 1967 to mark Canada's centennial. Facing the north, where the promise of the future lies, the Golden Boy carries the torch of progress and the bounty of his province's capital crop, symbolizing both the spirit of enterprise and eternal youth.

Some aspects of the Great Depression are unique to Canada's economic history. For example, it was the only major period of price deflation on record; economy-wide prices fell by almost 20% from 1929 to 1933. Similar declines in sales volume reduced total spending in the economy by just over 40%.

The sharp drop in employment and incomes was not offset by government transfer payments. Even in 1939, government transfers to individuals amounted to only $226 million, or 5.2% of personal income. This compares with $76.2 billion, or 13.8% of income, in 1990. Many Canadians responded to declining incomes by drawing on their savings. For the only time on record, total savings declined in Canada, dropping 9% in 1933 alone.

In the first five years of the Depression, the federal government responded to a 50% drop in revenues by cutting spending on goods and services and on payments to individuals, such as payments to World War I veterans and workers' compensation. However, spending could not be cut as fast as revenues fell; the result was a rising deficit and a 15% increase in interest payments from 1929 to 1933.

Today, Canada's economy is very different from what it was 60 years ago. Services now account for nearly two-thirds of total output, compared to just over 50% in 1929, while agriculture has declined sharply in importance. The shift in employment is even more pronounced, with services employment increasing from 36% to 70% of the total. Services are usually less prone to boom-bust cycles than goods, particularly agricultural and natural resource goods.

Output and employment tend to be more stable for services than for goods. Services cannot be stored, and thus over-production and inventory imbalances are not problems. Because services are rarely purchased before they are required, demand tends to be fairly stable despite price fluctuations. Finally, an economic slowdown can actually increase demand for services that help businesses improve competitiveness and efficiency. This was the case for the business services industries during the 1981-82 recession.

20.3 A REVIEW OF THE ECONOMY IN 1990

Personal expenditure Consumer spending weakened in 1990, reflecting increasing pessimism over job prospects and high interest rates. Consumer spending began to fall in the second quarter, after a marginal gain in the first. This was the first decrease since the 1981-82 recession.

Spending on durable goods was particularly weak. Auto sales fell sharply for four straight quarters, contributing to widespread cutbacks and layoffs. Furniture and appliance sales also sagged in response to the downturn in housing demand. By year-end, sales fell to new lows as employment declined and confidence in future growth waned following Iraq's invasion of Kuwait.

Consumption of other goods and services also slowed in 1990, after seven years of relatively buoyant growth. With disposable total income squeezed by lower employment and rising taxes, consumers cut back on purchases such as clothing, travel and restaurant meals.

MILK
SAVE US KIDS
MEETING TONITE TOWN HALL 8-PM
FATTER PROFITS
NOT
FATTER PROFITS
TOWN HALL 8 PM
DON'T TAKE AWAY MY MILK

Canadian Tribune Publishing Association/National Archives of Canada/PA 28557

When price controls were lifted at the close of World War II, the cost of many items rose dramatically.

THE BANK OF CANADA

The Bank of Canada, Canada's central bank, was established in 1935. It is responsible, under the Bank of Canada Act, for regulating "credit and currency in the best interests of the economic life of the nation", and acting as fiscal agent for the Government of Canada. The Bank is given certain very specific powers to carry out these responsibilities.

The Bank of Canada Act gives the Bank the sole right to issue all paper currency. It also requires each chartered bank to maintain a certain level of cash reserves in the form of coins, Bank of Canada notes, and deposits at the Bank of Canada, as well as secondary excess cash reserves. The Bank can alter this secondary reserve ratio of the chartered banks from 0-12% of deposits.

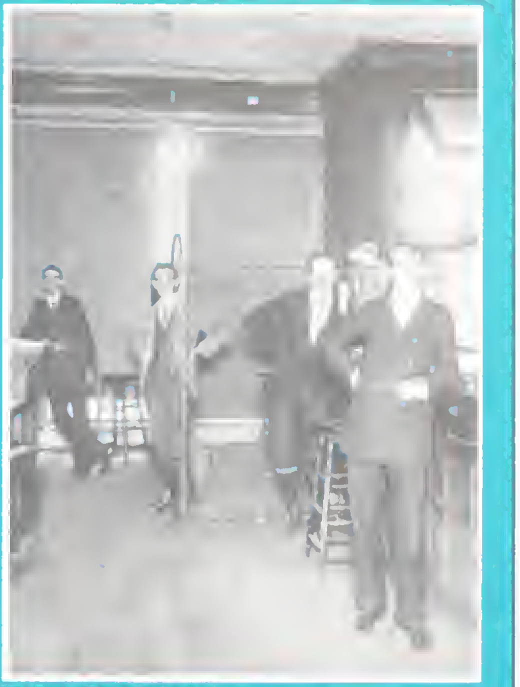
The Bank of Canada Act also permits the Bank to buy and sell a broad range of financial assets, make advances to and accept deposits from chartered banks, banks that operate under the Quebec Savings Bank Act or other members of the Canadian Payments Association, and make short-term advances to the Government of Canada or the government of any province. The Bank also administers the Bank Rate, which is the minimum interest rate at which the Bank is prepared to make advances.

As fiscal agent, the Bank operates the government's deposit account through which flow virtually all government receipts and expenditures, and it handles debt management and foreign exchange transactions for the government. The Bank of Canada does not accept deposits from the general public.

The establishment of a central bank came relatively late in the economic development of Canada. When the Bank of Canada began operations on March 11, 1935, the Federal Reserve System in the United States had already been running for 22 years. Since Confederation however, Canada's branch banking system had been serving the country relatively well, and one or two large banks, most notably the Bank of Montreal, had been able to handle most of the government's accounts. Though World War I brought unprecedented financial problems, they were solved through close co-operation between the government and the chartered banks, and although the issue of a central bank was occasionally raised in Parliament, it was not until the Great Depression that there was a widespread public questioning of the financial system.

The Bank was originally founded under the government of R.B. Bennett as a privately-owned corporation, but by 1938 ownership had passed to the Government of Canada. Since then, the Minister of Finance has held the entire $5 million share capital issued by the Bank. The Bank's independence from the government, however, is ensured by a number of provisions. The Bank's board of directors includes no direct representation by the government; the Deputy Minister of Finance sits on the board, but as a non-voting member. Also, the Governor and Senior Deputy Governor of the Bank are not appointed by the government but by the board of directors, although they must be approved by the Governor-in-Council. Both are appointed for relatively long terms — seven years — and the government cannot dismiss the appointee before the end of his term unless his conduct goes against society's accepted norms. The board of directors also controls the expenditures of the Bank, and the Bank is responsible for its own staff, who do not come under the Public Service Commission.

Despite the Bank's large measure of independence, however, the government is ultimately responsible for monetary policy. It has always been understood that the government can amend the Bank Act, if it deems it necessary, and since a 1967 revision to the Act, the government may issue a written directive to the Bank concerning monetary policy if the Governor and the Finance Minister cannot come to an agreement on policy.



The Bank of Nova Scotia Archives

Bank staff behind the tellers' wickets in New Glasgow, Nova Scotia, 1897.

Housing Five years of exceptionally rapid growth in housing demand came to a resounding end in 1990. Sales in the home market began to sag early in the year under the twin pressures of sharply rising prices and increasing mortgage rates. This downturn was quickly transmitted to new house construction, with housing starts falling to a seven-year low annual rate of 145,000 units in the fourth quarter of the year.

CONSUMER PRICE INDEX

Canada's most widely-used measure of the rate of inflation — the Consumer Price Index (CPI) — was first compiled in 1913. Essentially, the CPI measures monthly changes in the retail price of a selected basket of commodities. These fluctuations are published every month.

To understand a CPI index change, imagine that the index is 100.0 in January, 1986 and 125.0 in January, 1991. This would mean that consumer prices had risen 25%. The measured prices include taxes, such as the Goods and Services Tax (GST), provincial sales tax and property taxes.

The goods and services are updated each year to reflect changing spending patterns, extended population coverage and new base years. The current form of the index was first used in 1926. The importance of each item in the basket is defined by its share of family expenditures. Its "weight" is revised regularly to keep the CPI up-to-date.

Statistics Canada compiles the index for Canada and most major urban centres and first collected CPIs for the provinces in 1990.

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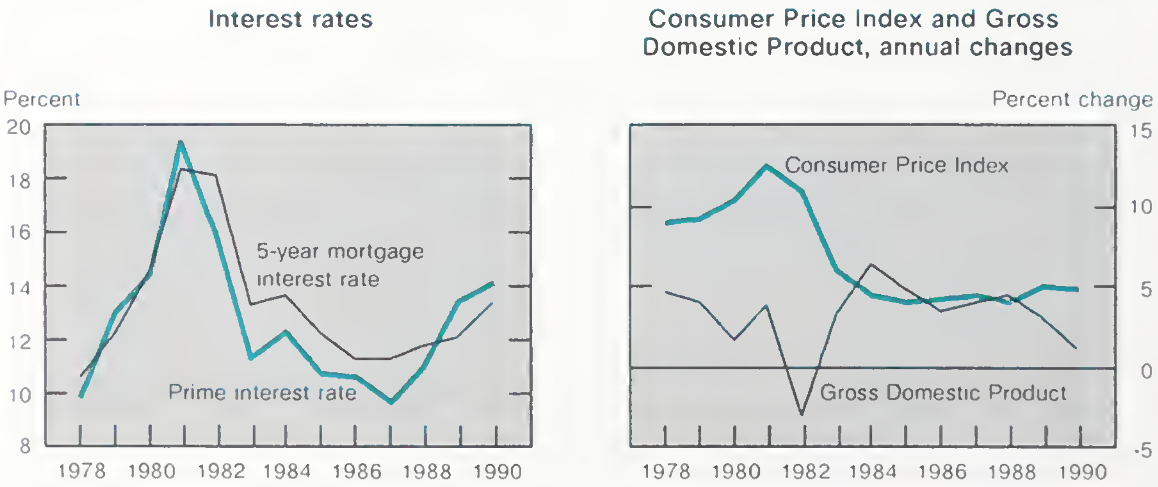
Shopping in the 1950s.

The drop in housing demand was most pronounced in central Canada, particularly in Toronto, where prices tumbled after surging by over 80% in the previous three years. Prices also dropped in Vancouver, where demand had been buoyant in 1989. Despite price declines, the inventory of unsold new homes was still climbing in the fourth quarter, pointing to further drops in new construction.

Business investment After the stock market crash of October 1987, capital spending on new plant and equipment played a major role in sustaining economic growth. Firms entered 1990 on a buoyant note, planning a 10% increase in investment; they were encouraged by healthy corporate balance sheets, rising bond and stock markets, and the need to modernize in an increasingly competitive business environment after the signing of the Canada–US Free Trade Agreement in 1989.

Chart 20.1

SELECTED ECONOMIC INDICATORS

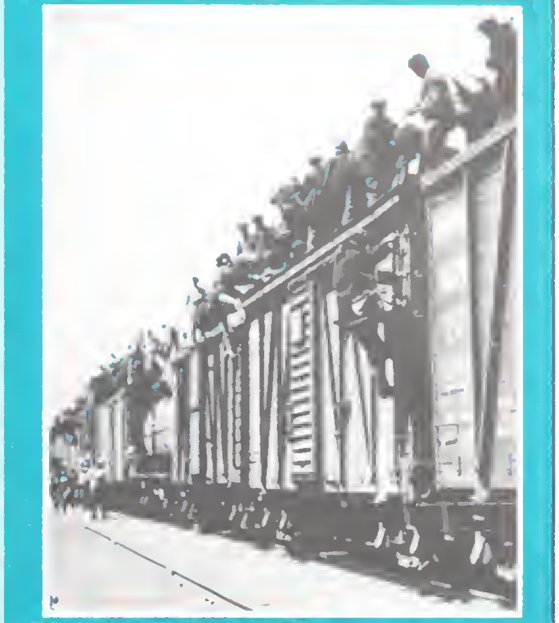


GROSS DOMESTIC PRODUCT

The Gross Domestic Product (GDP) is the most widely used indicator of Canada's economic performance, measuring how many goods and services were produced in Canada. As well, it shows the contribution made by households, business firms, governments and non-residents.

It is impossible to talk about the GDP without referring to Canada's National Accounts. First published in the late 1940s, with quarterly data made available in 1952, the National Accounts provide a comprehensive measure of total spending with a wealth of data on prices, transfer payments, taxes, savings and earnings. The GDP is the focal point of the National Accounts, although the Accounts also feature other indicators such as balance of payments and financial flows.

The GDP is calculated by subtracting imports out of total spending, thus providing an estimate of goods and services produced in Canada. Demand will change in response to changes in consumer spending, housing, business investment, government spending, and exports. When spending is falling, as was the case in most of 1990, unemployment usually increases and the period is called a recession; expansions occur when total spending is increasing and unemployment is subsiding. The GDP is the best measure of this cycle of recession and expansion — the business cycle. While the GDP is not to be used as a measure of the well-being of a society, its close link to important variables such as unemployment make it a widely used measure of how the economy is performing.



National Archives of Canada/C 29339

Riding the rails in the Depression years.

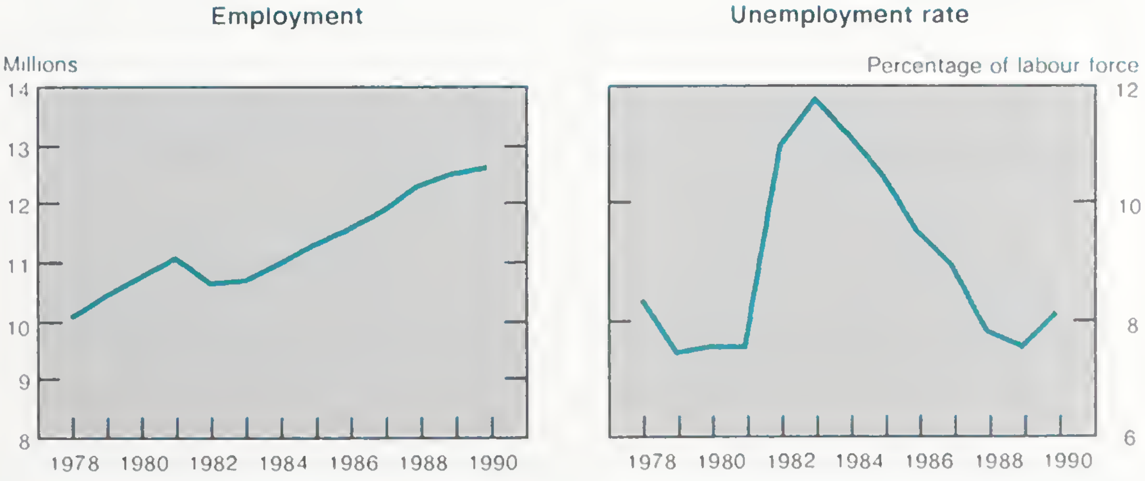
However, actual investment spending declined in 1990, and this downturn was accompanied by a sharp drop in corporate profits. Profits before taxes fell by 20% from 1989; after accounting for a surge in dividends paid to non-residents, profits retained in Canada were down 42% to their lowest level since 1982.

Inventories and employment were also affected by declining sales and profit margins. In past downturns, firms waited until inventories rose substantially before slashing production and employment. In 1990, however, firms were very quick to cut output and employment, largely because of computerized inventory monitoring and improved financial management. Output peaked in April; by May, employment began to drop.

Labour markets Labour market conditions deteriorated along with output in 1990. Employment peaked in April, declining sharply for the remainder of the year. From a low of 7.2% in March, the unemployment rate climbed to 9.3% by December. There was also a sharp increase in labour disputes in 1990.

Chart 20.2

EMPLOYMENT AND UNEMPLOYMENT



THE CHANGING COST OF LIVING

According to the 1918 *Year Book*, a typical Canadian family — father, mother and three children — needed about $20 a week for such basics as food, lighting and rent. Of that, food accounted for about half the expenses. Since then, some prices have gone up 1,000%. In 1918, for example, a pound of cheese cost about 30 cents. Today, the equivalent (454 g) runs about $4.50. Similarly, a quarter pound (113 g) of coffee that costs about $1.00 today cost 10 cents back then.

Merrilees/National Archives of Canada/PA 126758

The corner grocery store, Ontario, 1913.

Goods-producing industries bore the brunt of the recession in 1990. Employment in these industries fell by 3.1%, with manufacturing posting the largest drops. Growth in services slowed to a crawl by mid-1990, checked by declines in goods-handling industries such as transportation and trade.

As in the 1981-82 recession, the 15 to 24 age group was hardest hit by increasing unemployment in 1990. This is partly because firms tend to reduce hiring rather than lay off employees during a recession. This leads to a sharp reduction in entry-level jobs: in 1990, the help-wanted index fell by more than 40% to its lowest level in over three years.

Two long-term trends in labour force participation continued in 1990. The proportion of men aged 25 and over in the labour force dropped, while the participation of women in this age group increased. As well, declines occurred in both the size and the participation rate for the 15 to 24 age group.

International trade The current account deficit narrowed to $16.0 billion in 1990, after reaching a record $16.7 billion in 1989. However, the source of the deficit changed in 1990. In 1988 and 1989, deficit increases originated in the merchandise trade account, as import demand rose faster than exports because of the fast growth of the Canadian economy compared to its major trading partners. In 1990, the economic slowdown curtailed imports and raised the merchandise trade surplus, but this was offset by sharp increases in interest and dividend outflows, partly due to the sharp rise in Canada's external debt in the 1980s.

Merchandise exports in 1990 increased by 2.8%. The negative impact of slowing US demand for a number of forestry and metal products was offset by a sharp rebound in grain exports, which had been devastated in 1989 by drought on the Prairies. Wheat exports alone were 30% higher than in 1989, despite low prices on world markets. Canada remains a substantial net exporter of all major energy products, with a total surplus of $6.3 billion in 1990.

Import growth slowed considerably in 1990, particularly with autos and machinery and equipment, the two biggest import components. The machinery and equipment slump reflected the downturn in business investment — over half of machinery and equipment is imported. Imports of automobiles and automobile parts were curtailed by weak production and sales. Imports were also affected by the rapid growth of "transplants" (plants established in Canada by overseas producers) over the previous two years; in 1990, these plants accounted for over 15% of all auto production in Canada.

Inflation Early in 1990, the annual rate of increase of the Consumer Price Index (CPI) jumped to 5.5%, largely due to a surge in food and energy prices after a record cold snap in December 1989. These increases proved to be transitory, however, and the CPI rate eased to 4.2% by mid-year. Continued high wage settlements, coupled with a sharp increase in oil prices on world markets following Iraq's invasion of Kuwait, fuelled concerns about the short-term course of inflation. By the end of the year the CPI rate had risen to 5%. This contributed to a continuation of high short- and long-term interest rates.

Energy expenditures account for 6.7% of the CPI, with more than half of this total going to oil-based products such as gasoline and home heating oil. Canada can reduce the economic shock of a sustained increase in oil prices by continuing to focus on energy conservation. In the 1980s, Canada reduced its per capita energy consumption by nearly 30%. Moreover, natural gas and electricity have replaced petroleum products for a wide range of uses outside of transportation. In 1989, oil products accounted for only 22% of energy demand outside of transportation, down from 36% 10 years earlier.

Prices continued to moderate in most other sectors of the economy. Manufacturing prices were generally stable due to weak demand and a rising exchange rate. Natural resource prices, on the other hand, were weak as a result of slowing industrial demand and bountiful harvests of agricultural products. Overall, the year-over-year increase in the implicit price index for GDP — a measure of the cost of all goods and services produced in Canada — slowed to 3.1% in 1990 from 4.8% in 1989.

Source
Statistics Canada.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Canadian Social Trends*, quarterly. 11-008
- *Canadian Economic Observer*, monthly. 11-010
- *Canadian Economic Observer: Historical Statistical Supplement*, annual. 11-210
- *National Income and Expenditure Accounts, the Annual Estimates*, annual. 13-201
- *Income Distribution by Size in Canada*, annual. 13-207
- *Financial Flow and National Balance Sheet Accounts*, annual. 13-214
- *The Distribution of Wealth in Canada, 1984*, 1986. 13-580
- *Charting Canadian Incomes, 1951-1981*, 1984. 13-581
- *Gross Domestic Product by Industry*, monthly. 15-001
- *Provincial Gross Domestic Product by Industry*, annual. 15-203
- *Aggregate Productivity Measures*, annual. 15-204
- *Seasonal Variations in the Canadian Economy: Retail Trade*, 1985. 16-502
- *The Input-Output Structure of the Canadian Economy in Constant Prices*, annual. 15-202

TABLES

LEGEND

.. *not available*
... *not appropriate or not applicable*
— *nil or zero*
-- *too small to be expressed*

e *estimate*
p *preliminary*
r *revised*

(Certain tables may not add due to rounding.)

20.1 EXPENDITURE AGGREGATES IN 1986 DOLLARS, 1980-89

Year	Percentage growth rates							
	Personal expenditure	Government current expenditure	Residential construction	Non-residential construction	Machinery and equipment	Exports	Imports	Gross domestic expenditure
1980	2.2	2.8	−5.4	10.7	21.3	2.7	4.9	1.5
1981	2.3	2.5	6.6	8.6	18.1	4.4	8.5	3.7
1982	−2.6	2.4	−16.3	−8.9	−14.0	−2.2	−15.2	−3.2
1983	3.4	1.4	17.0	−8.5	−4.1	6.4	9.0	3.2
1984	4.6	1.2	0.5	−1.8	5.5	17.7	17.1	6.3
1985	5.2	3.2	9.8	5.2	12.3	6.0	8.7	4.8
1986	4.4	1.6	13.3	−5.5	13.5	4.5	7.6	3.3
1987	4.5	1.8	15.5	2.4	14.8	3.0	6.7	4.0
1988	4.3	2.8	3.8	10.6	18.4	8.9	12.9	4.4
1989	3.8	2.6	2.4	3.9	5.6	0.7	5.1	3.0

20.2 CANADA'S GROSS DOMESTIC PRODUCT AT FACTOR COST, BY INDUSTRY[1], 1970, 1980, 1984 AND 1989

Industry	1970	1980	1984	1989
Agricultural and related services	2.9	2.1	2.1	1.6
Fishing	0.3	0.2	0.2	0.2
Forestry	0.8	0.6	0.7	0.6
Mining	6.4	4.1	3.9	3.5
Manufacturing	19.7	17.7	17.5	16.8
Construction	6.2	5.7	5.4	5.8
Trade	10.5	9.6	9.7	10.6
Finance, insurance and real estate	12.3	13.4	13.3	14.1
Transportation, communications and utilities	9.1	10.1	10.2	10.5
Community, business and personal services	20.2	20.2	20.1	20.0
Public administration	7.5	6.7	6.6	5.8

[1] *Based on per cent of Canada's GDP.*

20.3 CANADA'S GROSS DOMESTIC PRODUCT AT MARKET PRICES[1], 1970, 1980, 1984 AND 1989

Province or territory	1970	1980	1984	1989
Newfoundland	1.4	1.3	1.3	1.3
Prince Edward Island	0.3	0.3	0.3	0.3
Nova Scotia	2.5	2.0	2.4	2.5
New Brunswick	1.9	1.6	1.9	1.9
Quebec	25.5	23.3	22.8	23.6
Ontario	42.0	37.1	38.7	41.5
Manitoba	4.2	3.6	3.7	3.5
Saskatchewan	3.4	4.0	3.7	3.1
Alberta	8.0	13.9	13.3	10.3
British Columbia	10.6	12.4	11.5	11.5
Yukon and Northwest Territories	0.3	0.4	0.4	0.4

[1] *Based on per cent of Canada's GDP.*

20.4 CREDIT AND EXCHANGE MARKET FIGURES[1], 1980-89

Year	Prime rate	91-day treasury bill rate	Long-term Canada bond rate	Conventional mortgage rate	Canadian dollar in US cents
1980	14.25	12.71	12.48	14.52	85.54
1981	19.29	17.78	15.22	18.38	83.42
1982	15.81	13.83	14.26	18.04	81.08
1983	11.17	9.32	11.79	13.23	81.14
1984	12.06	11.11	12.75	13.58	77.25
1985	10.58	9.46	11.04	12.13	73.24
1986	10.52	9.00	9.52	11.21	71.97
1987	9.52	8.15	9.95	11.17	75.43
1988	10.83	9.48	10.22	11.65	81.29
1989	13.33	12.05	9.92	12.06	84.47

[1] *Interest rates and exchange rate are annual averages of monthly levels.*

20.5 INDUSTRY PRODUCT PRICE INDEX ANNUAL INFLATION RATE[1], 1982-89

Year	Food and beverages	Textiles	Wood	Furniture and fixtures	Paper	Primary metals	Metal fabricating	Transportation	Petroleum and coal	Chemical	Non-metallic minerals	Total
1982	5.1	4.0	−0.5	9.0	3.3	0.5	7.5	8.7	15.7	5.6	12.6	6.7
1983	3.3	1.8	10.3	4.2	−3.3	2.8	3.0	4.4	5.3	3.4	4.2	3.5
1984	5.5	3.4	−2.0	4.4	11.3	3.3	4.0	5.6	4.4	4.4	1.7	4.5
1985	1.4	1.8	2.0	2.8	1.2	−1.7	3.4	6.8	5.0	1.7	3.2	2.8
1986	4.3	1.7	8.4	4.0	4.2	2.2	3.4	4.5	−19.7	1.3	5.2	0.8
1987	3.0	2.2	2.6	4.6	9.4	5.4	3.0	−0.2	−4.9	3.1	3.7	2.7
1988	3.7	3.8	2.2	4.1	9.5	18.0	4.5	−1.8	−6.5	9.0	3.9	4.4
1989	2.8	2.5	3.1	4.1	2.8	−0.1	3.2	0.6	1.6	2.1	2.0	2.3

[1] *Annual inflation rates are based on the average of the monthly price levels.*

20.6 CONSUMER PRICE INDEX ANNUAL INFLATION RATE, 1980-89

Year	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, reading and education	Tobacco and alcohol	All items
1980	10.7	8.1	11.7	12.8	9.9	9.5	11.2	10.2
1981	11.4	12.4	7.1	18.4	10.9	10.1	12.9	12.5
1982	7.2	12.5	5.6	14.1	10.6	8.7	15.5	10.8
1983	3.7	6.8	4.0	5.0	7.0	6.5	12.6	5.8
1984	5.6	3.8	2.5	4.2	3.9	3.4	8.2	4.4
1985	2.9	3.5	2.8	4.8	3.6	4.0	9.5	4.0
1986	5.0	3.0	2.8	3.2	4.2	4.7	11.9	4.1
1987	4.4	4.0	4.2	3.6	5.0	5.4	6.7	4.4
1988	2.7	4.4	5.2	1.9	4.4	5.6	7.4	4.0
1989	3.6	5.3	4.1	5.2	4.4	4.4	9.3	5.0

20.7 RAW MATERIALS PRICE INDEX ANNUAL INFLATION RATE[1], 1982-89

Year	Wood materials	Ferrous materials	Non-ferrous metals	Coal and petroleum	Animals	Vegetables	Total
1982	−3.8	−3.1	−11.5	20.3	5.4	−12.5	7.5
1983	4.1	1.6	4.3	7.1	−2.3	4.5	4.3
1984	3.5	9.4	−0.8	1.5	5.9	8.1	3.0
1985	0.6	1.7	−5.7	4.7	−1.5	−7.6	1.1
1986	5.0	0.7	3.7	−36.6	5.4	−1.5	−17.7
1987	10.9	−1.4	14.1	8.0	5.1	−5.9	6.4
1988	8.2	1.8	19.2	−19.3	−4.5	10.3	−5.2
1989	1.4	4.0	−2.6	10.8	1.2	−0.1	3.8

[1] *Annual inflation rates are based on the average of the monthly price levels.*

20.8 EMPLOYMENT BY INDUSTRY ANNUAL PERCENTAGE GROWTH RATES, 1980-89

Year	Primary industry	Manufacturing	Construction	Transportation storage, communication and other utilities	Trade	Finance, insurance and real estate	Services	Total
1980	9.1	1.9	−3.1	0.3	1.6	10.3	4.8	3.0
1981	7.0	0.6	4.3	0.6	2.6	−2.9	5.4	2.8
1982	−16.8	−9.2	−8.6	−3.2	−2.2	1.2	0.3	−3.5
1983	3.7	−2.5	−5.5	−1.9	−0.2	0.0	3.7	0.5
1984	2.9	4.0	0.4	−1.5	4.2	5.3	1.9	2.4
1985	1.4	0.3	2.7	2.8	3.6	−0.6	5.0	2.6
1986	−1.4	1.5	6.7	1.7	4.0	4.5	3.7	2.8
1987	−0.4	1.5	8.9	0.9	1.6	6.2	4.1	2.9
1988	3.5	4.3	7.9	0.6	3.4	4.3	3.7	3.2
1989	−2.0	1.1	5.2	6.3	0.8	0.7	2.2	2.0

20.9 UNEMPLOYMENT AND RELATED STATISTICS, 1980-89

Year	Labour force[1]	Employment[1]	Unemployment rate[2]	Participation rate[3]
1980	3.0	3.0	7.5	64.1
1981	2.8	2.7	7.5	64.8
1982	0.2	−3.5	11.0	64.1
1983	1.5	0.5	11.8	64.4
1984	1.7	2.4	11.2	64.8
1985	1.8	2.6	10.5	65.3
1986	1.7	2.8	9.5	65.7
1987	2.1	2.9	8.8	66.2
1988	2.0	3.2	7.8	66.7
1989	1.7	2.0	7.5	67.0

[1] *Expressed as annual growth rates.*

[2] *Unemployment as a percentage of the labour force.*

[3] *Labour force as a percentage of the total population 15 years of age and over.*

20.10 PERSONAL EXPENDITURE IN 1986 DOLLARS, 1980-89

Year	Percentage growth rates			
	Durables	Semi-durables	Non-durables	Services
1980	−0.4	0.4	1.4	4.3
1981	2.8	2.5	0.9	2.9
1982	−12.6	−5.3	−1.7	0.6
1983	11.9	2.8	0.0	3.5
1984	13.3	5.1	1.2	4.0
1985	14.0	4.5	2.6	4.1
1986	6.4	5.4	1.5	5.2
1987	8.2	3.7	0.9	5.7
1988	6.5	2.0	3.9	4.4
1989	2.5	2.1	2.8	5.1

20.11 CURRENT ACCOUNT BALANCE, 1980-89

Year	Current dollars ($ 000 000)		
	Merchandise trade	Non-merchandise trade	Total
1980	8,778	−9 908	−1 130
1981	7 292	−13 423	−6 131
1982	17 654	−14.831	2 824
1983	17 457	−14 391	3 066
1984	19 838	−17,143	2 695
1985	16.392	−18.383	−1 991
1986	9 944	−20.099	−10 155
1987	11,107	−20.275	−9 168
1988	10,114	−20.275	−10.162
1989	7.557	−24,245	−16.688

20.12 MERCHANDISE IMPORTS BY COMMODITY, 1980-89

Year	Percentage growth rates of current dollar levels				
	Energy products	Industrial materials	Machinery	Motor vehicles and parts	Food
1980	45 9	13.9	16.3	−10.6	11.7
1981	15.2	5.9	16.6	18.2	8.7
1982	−30.5	−17.6	−12.8	−6.9	−7.3
1983	−23.4	12.6	5.7	28.0	2.2
1984	18.8	17.2	26.8	37.2	18.1
1985	3 5	11.3	6.4	20.9	−0.7
1986	−19 9	5.8	11.0	6.5	10.9
1987	16.3	4 1	6.8	−1.1	3.2
1988	−12.5	23.1	21.5	2.0	1 2
1989	20.2	5.3	7.0	−4.1	7.0

20.13 MERCHANDISE EXPORTS BY COMMODITY, 1980-89

Year	Percentage growth rates of current dollar levels			
	Crude energy materials	Industrial materials	Motor vehicles and parts	Food
1980	20.9	34.5	−7.8	23.6
1981	8.3	−0.8	23.8	14 0
1982	5.4	−15.3	24.7	5.1
1983	2.5	−0.5	26.5	2.0
1984	12.0	17.7	38.3	5.9
1985	13.7	4.5	12.8	−9.6
1986	−36.6	9.4	−3.9	4.6
1987	10.2	5.4	−6.7	7.8
1988	−2.0	10.5	13.0	10.7
1989	3.5	14.3	3.2	−11.6

Source
Statistics Canada

CANADA YEAR BOOK

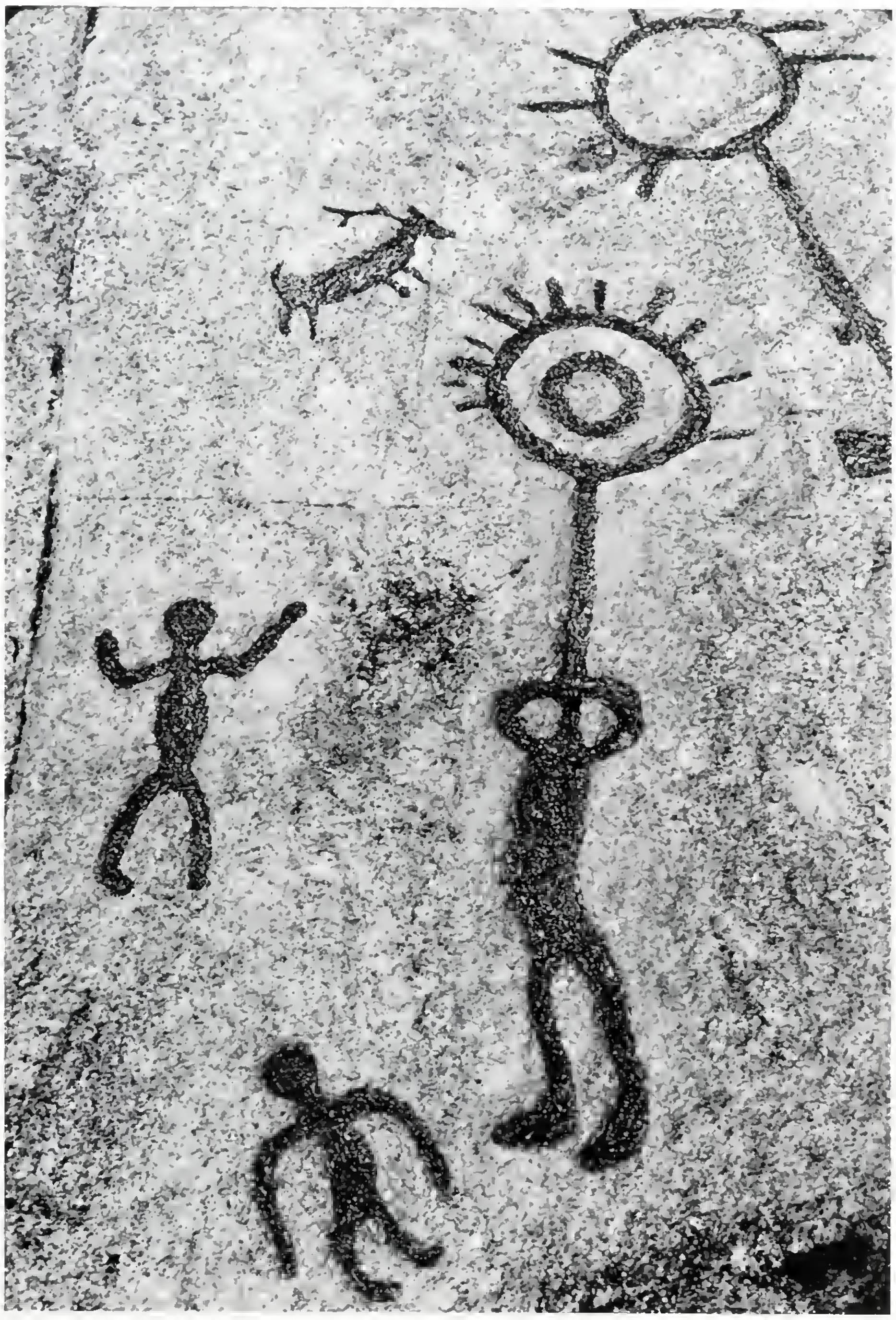
ARTS AND LEISURE

Section 5

REFLECTIONS OF CANADA IN CANADIAN ART

While art in Canada has been diverse and varied, a concern of many artists has been the look of the land and the look of the people. As much as anything else, Canadian art has been a search for Canadian identity.

This selection of art shows how a variety of artists have expressed themselves in their time, in the place where they lived in Canada. While these works of art are not the most widely known, they are nonetheless a measure of the richness and variety of Canadian artistic endeavour. They also support, collectively and individually, the theme of reflection. This theme is apparent either in the recording of the way something looks, or in the contemplation of an idea, or in the literal use of a mirror or camera to reflect a scene.



outdoor stone carving by anonymous Algonkian, circa 900-1400 A.D.

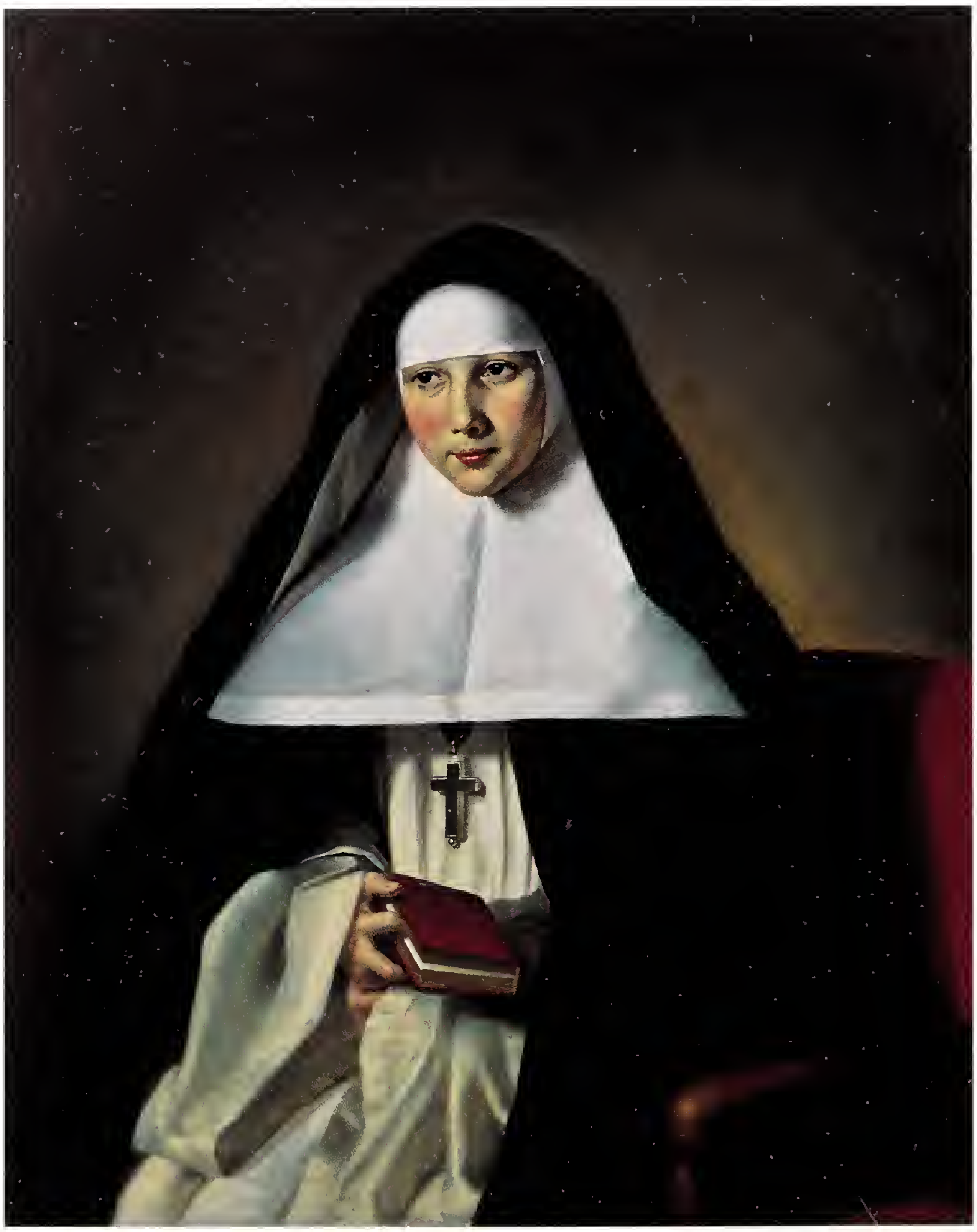
Sun Figure, Peterborough Petroglyphs

©1973 by J.M. and R.K. Vastokas

Petroglyphs — rock carvings — and pictographs — paintings, usually on stone — are among the earliest evidence of visual art in North America. The earliest occurrences antedate contact with Europeans. Sites of carvings and paintings have been discovered scattered across all regions of southern Canada from the West to the East Coasts. Indeed, native rock art originating with aboriginal cultures and preceding writing is found around the world.

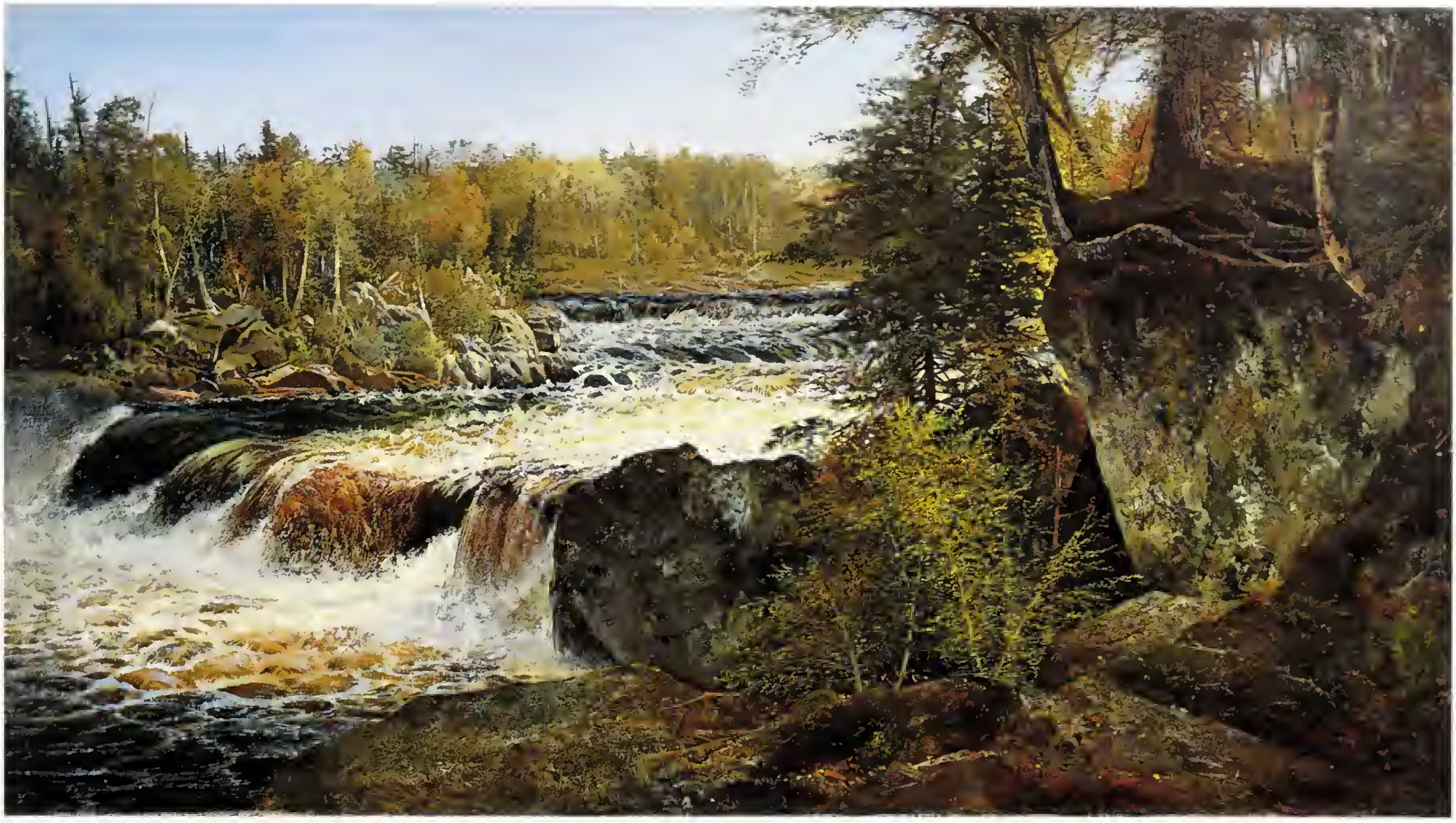
Variously suggested to be illustrations of spiritual visions, teaching records of interactions with spirits of the site, or images resulting from ritual actions performed to facilitate good fortune, exact interpretations today are impossible.

The Peterborough Petroglyph site, now protected in Petroglyph Provincial Park near Stony Lake in Ontario, is an unusual outcrop of white crystalline limestone. There are estimated to be hundreds of images chipped into the rocks at this site, proclaiming it to be a location of unusual power and a sacred place.



Antoine-Sébastien Plamondon (1804-1895)
Soeur Saint-Alphonse 1841
oil on canvas, 90.6 x 72.0 cm
National Gallery of Canada, Ottawa

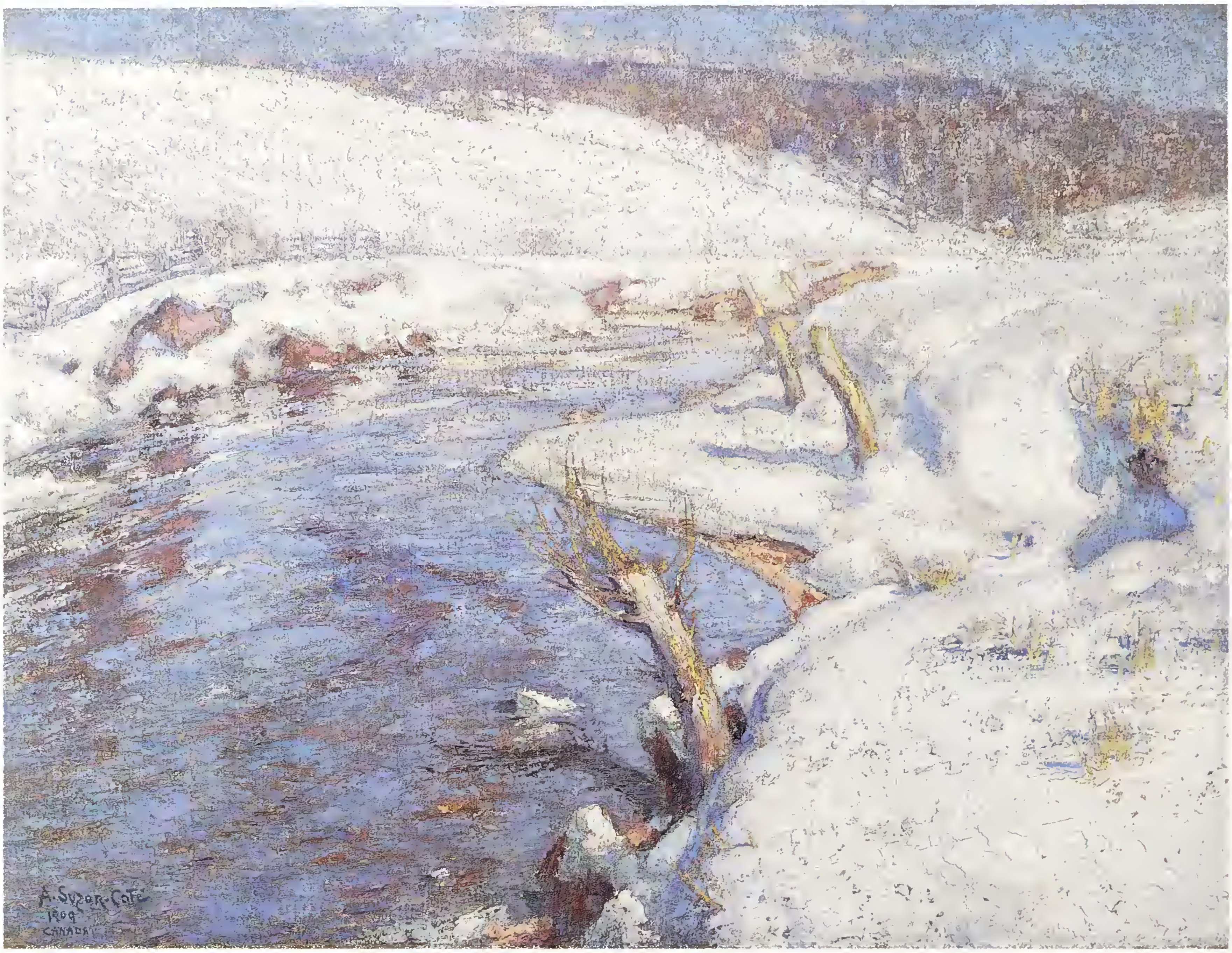
A pre-eminent Quebec painter, Antoine-Sébastien Plamondon was the first Canadian-born artist to be known as a portraitist. Working in Quebec City in 1841 Plamondon made three portraits of nuns of the Hôpital Général in Quebec City. In this portrait of Soeur Saint-Alphonse, the young woman's face and hands are subtly modelled, yet the painter's portrayal of the quietly happy nun also captures hints of weariness and strains of ill-health in the deep shadowed setting of her eyes and the contrast between the pallor of her face and her blushed cheeks. Soeur Saint-Alphonse died at the young age of 30, only five years after this portrait was painted.



Allan Edson (1846-1888)
Landscape with Cascade 1872
oil on canvas, 50.5 x 91.7 cm

National Gallery of Canada, Ottawa
Gift of Liliane Bureau-Blouin, Magog, Quebec, 1984

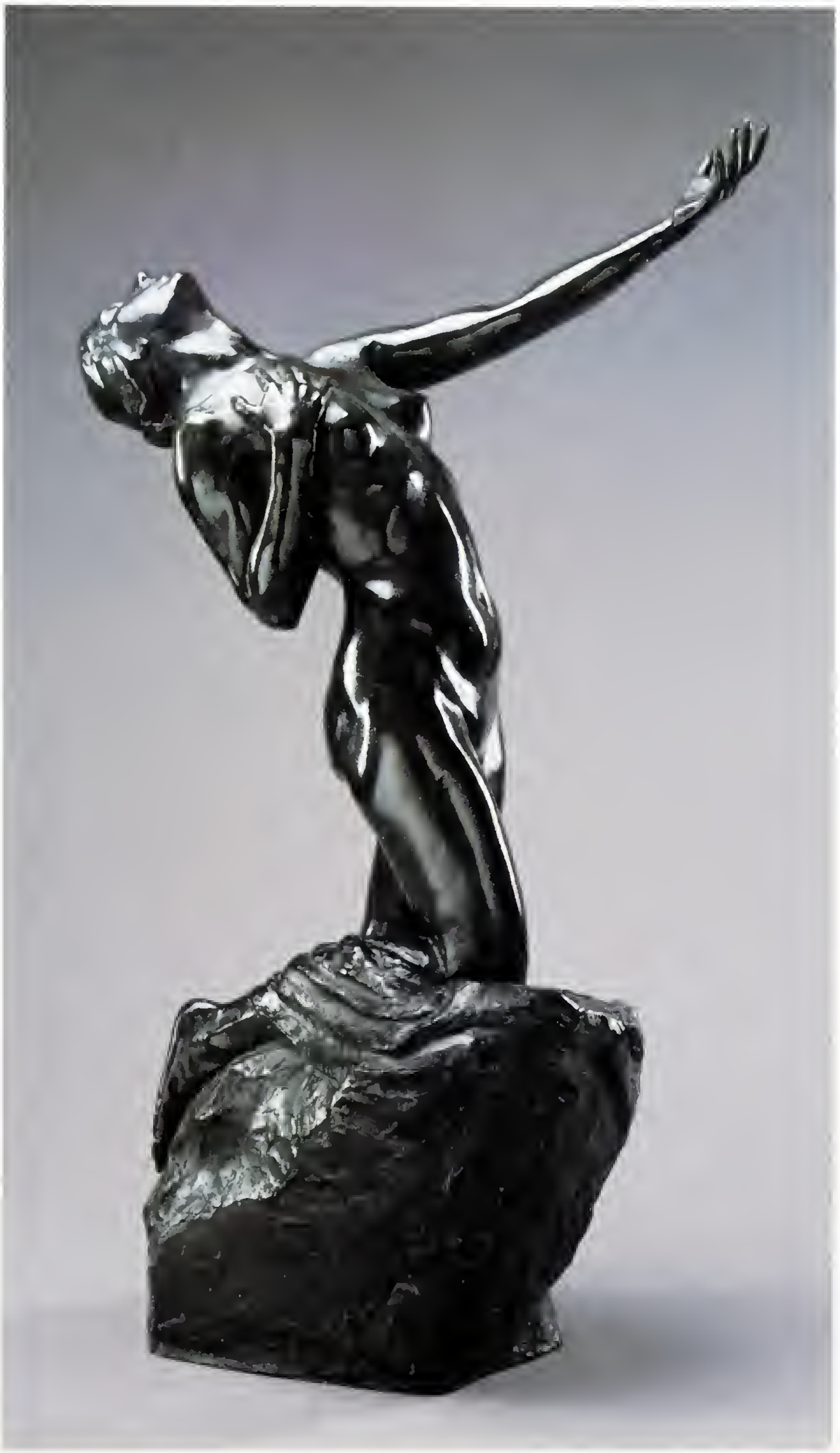
In the late 1800s the influence of photography was beginning to be seen in the techniques of Canadian painters. Allan Edson was 26 years of age when he painted ***Landscape with Cascade****. The painting contains startling and complex details of falling water, tree branches, and rock surfaces that owe a great deal to their reference to photographs. While the painting contains the relentless detailing of a photograph, its composition, colouring, and lighting suggest that this work was made in the studio with certain of the conventions of landscape art of the time. The lack of human presence in this picture is part of a romantic tradition of landscape painting that depicts nature as grand and untamable.*



Marc-Aurèle de Foy Suzor-Coté (1869-1937)
Winter Landscape 1909
oil on canvas, 72.2 x 94.4 cm

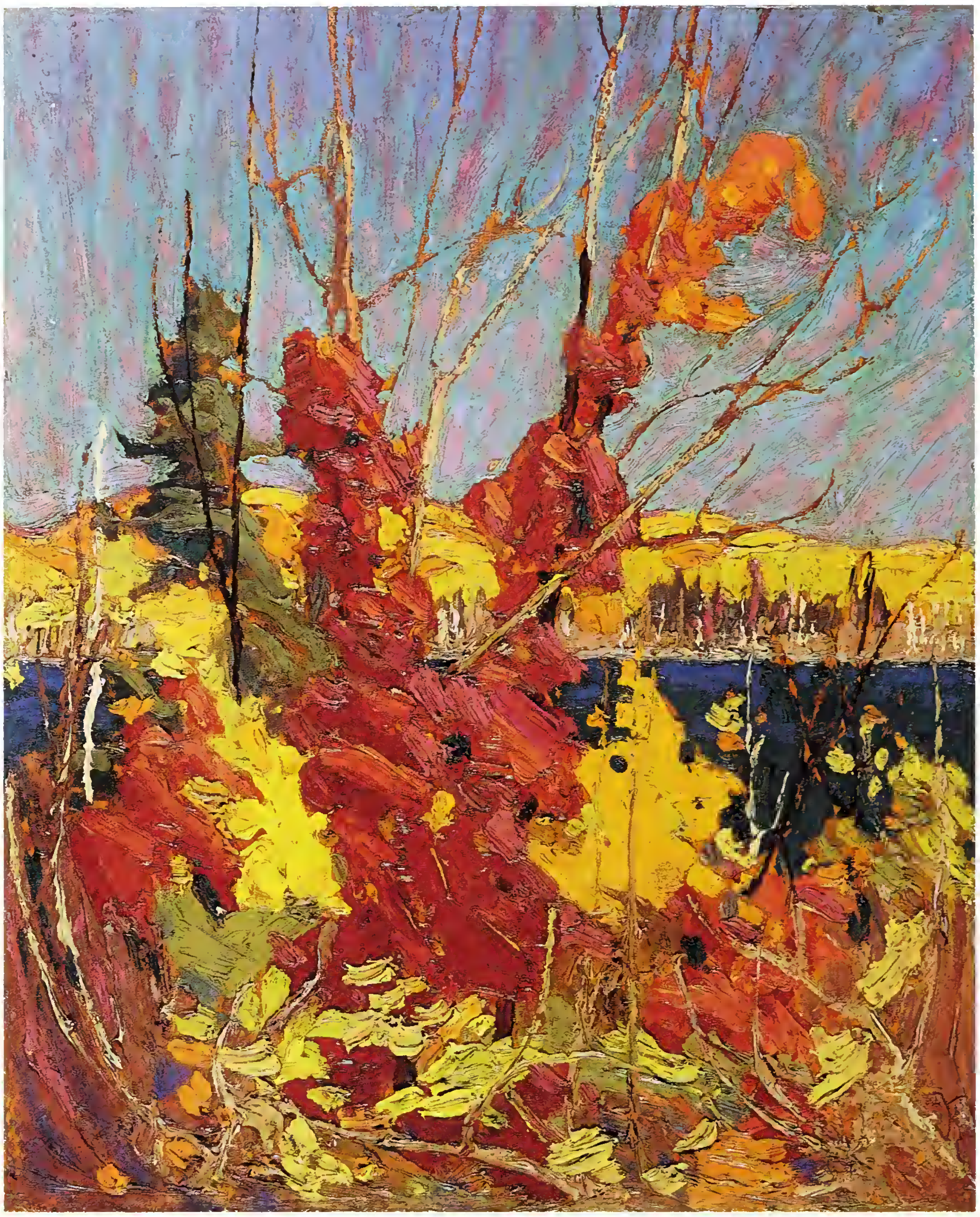
National Gallery of Canada, Ottawa
Gift of Arthur S. Hardy, Ottawa, 1943.

After studying in France for over 10 years, Suzor-Coté returned to Canada in 1907 working in a Late Impressionist manner. While this scene is believed not to have been realized ***en-plein-air****, but rather composed of several views, there is an engaging vividness in the light of the afternoon winter sun. Adapting what was an essentially European mode of painting, Suzor-Coté was able to capture the lightness and openness of his own Eastern Township landscape. With thickly smeared and vigorously worked areas of paint, surprisingly subtle colour tones glow in the snow and water of this picture. In this sensitive description of the landscape the artist is able to convey both the coldness of the scene and the suggestion of warmth in the afternoon sun promising the earliest hint of spring.*



Florence Wyle (1881-1968)
Sun Worshipper
circa 1916 bronze, 67.6 x 23.9 x 33.2 cm
National Gallery of Canada, Ottawa

It may be that no other sculpture of the time portrays a more vivid and ecstatic image of the yearning of the Canadian soul for warmth, light and liberty. A young woman in the landscape, knee resting on a rock, offers her face skyward, eyes closed, hand extended in welcome to greet the warming radiation of the sun's rays. ***Sun Worshipper*** *touches a close Canadian sentiment that continues to be part of our collective psyche today. Florence Wyle was well known in Toronto as one of only a handful of dedicated figurative sculptors in Canada in the first half of the twentieth century.*



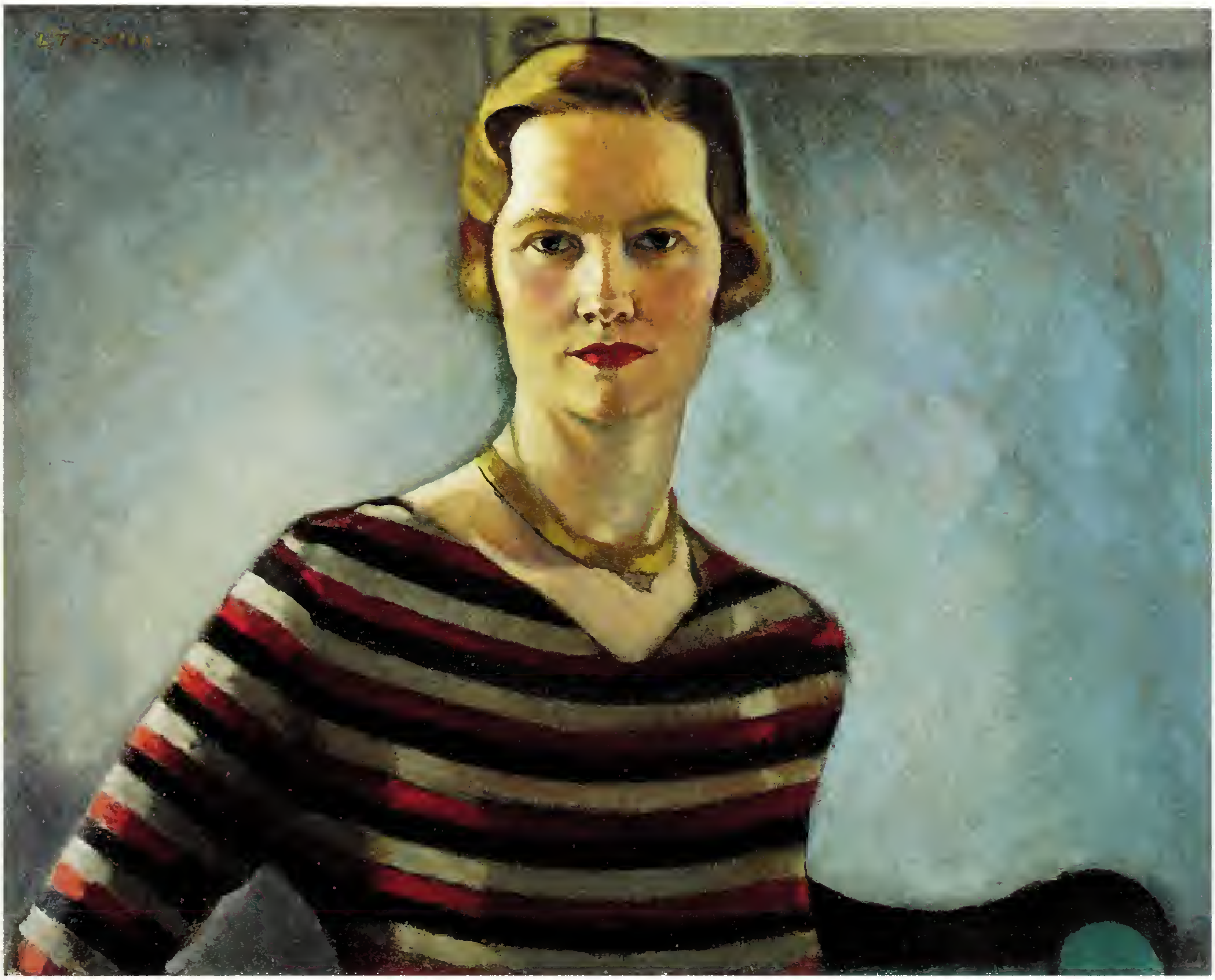
Tom Thomson (1877-1917)

Autumn Foliage 1916

oil on wood, 26.7 x 21.5 cm

National Gallery of Canada, Ottawa

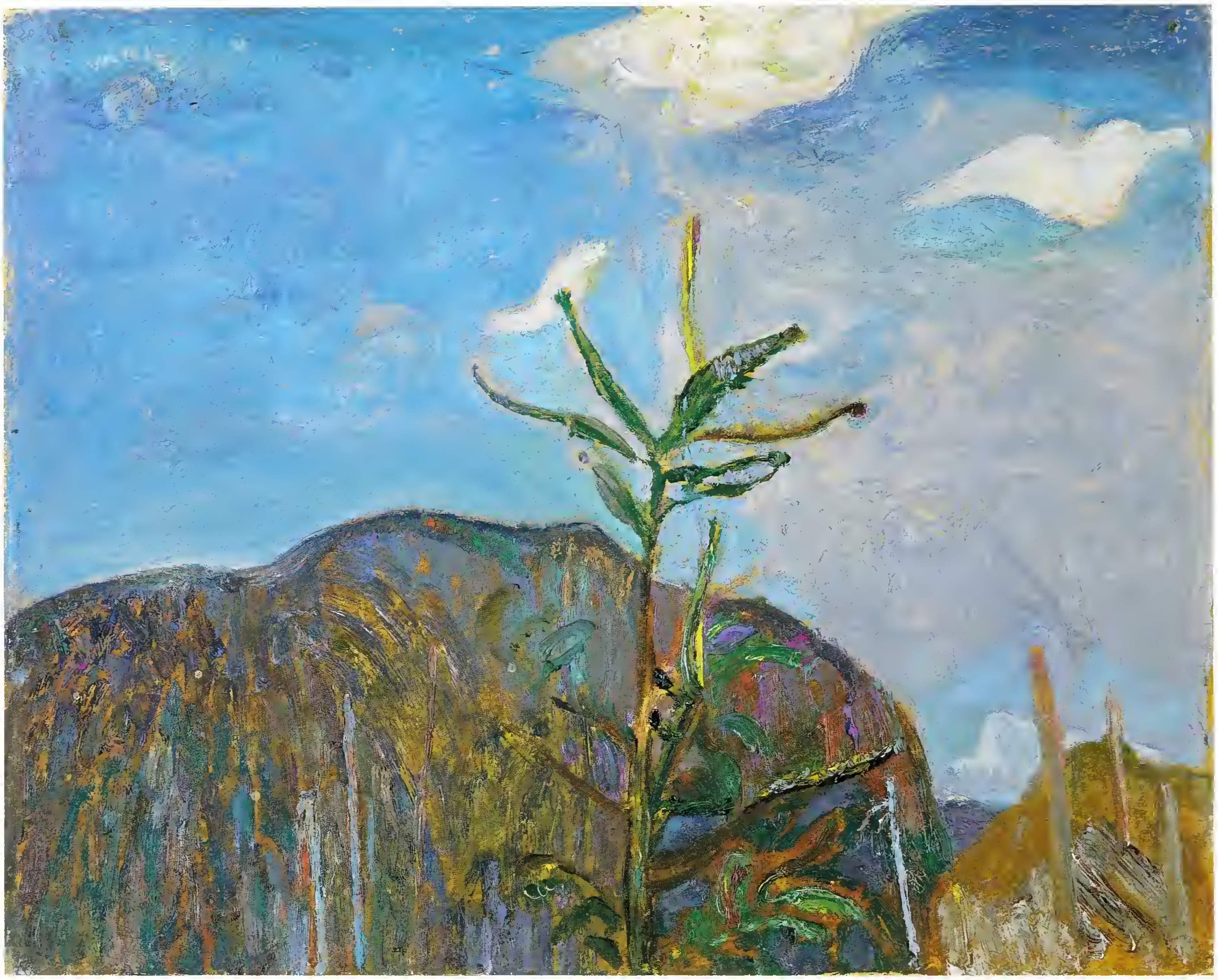
Trained as a designer and illustrator and painter of Canada's most passionate landscape pictures, Tom Thomson was in his mid-thirties before he began to paint seriously. Initially recognized only by a small group of fellow artists, his early death has contributed to the myth of his raw genius and a mystique of unrealized potential. Thomson trusted to the experience of the landscape that he knew well. His best works are the small sketches he painted during the time he spent in Algonquin Park, Ontario, where he also worked as a fishing guide. The ardour and vitality of Thomson's paintings contributed to the inspiration for the formation of the famous Group of Seven painters.



Lilias Torrance Newton (1896-1980)
Self-portrait
circa 1929 oil on canvas, 61.5 x 76.6 cm
National Gallery of Canada, Ottawa

This artist's self-portrait reflects a self-confident, direct individual entirely self-possessed and in masterful control of her painterly skills. Few women in Canada in the early twentieth century devoted themselves to art, but Lilias Torrance Newton was the best portraitist of her generation and this picture can be seen as an emblem of youthful self-confidence. Asserting a faith in a straightforward progress to the future, this portrait embodies the optimism and ambition of the time.

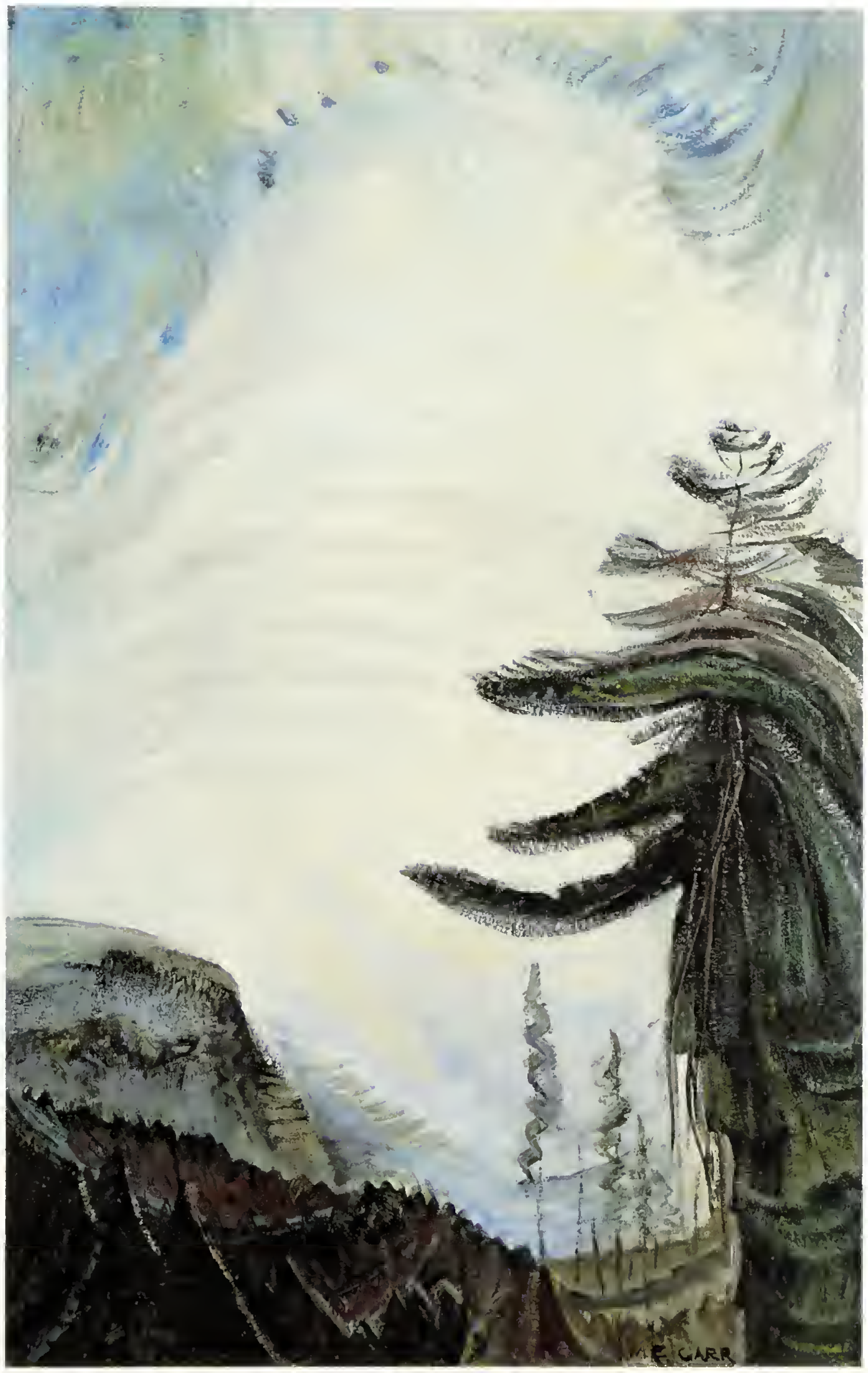
While the shoulders and upper body of Lilias Torrance Newton are slightly turned, the full-faced head is centred exactly in the canvas. Bold and deceptively simple, this painting employs masterful composition devices. Careful modelling of the greyish light makes the air-space around the head almost tangible. The face is painted with confidence and shines with light from disparate sources. The restrained but elegant organization of lines in the rectangle contributes to the subject's air of dignity.



Frederick H. Varley (1881-1969)
Three Clouds and a Tree
circa 1935 oil on wood, 30.1 x 38.0 cm

National Gallery of Canada, Ottawa
Gift from the Douglas M. Duncan Collection, 1970.

Born in England and trained there and in Belgium, Frederick Varley came to Canada in 1912 and was a member of the Ontario-based Group of Seven, founded in 1920. He moved to Vancouver in 1926 and began a stage of landscape painting with a feast of colour and a vigour of brushstrokes. Always very skilful and surprising with colour, Varley's West Coast landscapes come close to abstraction. ***Three Clouds and a Tree*** *is a picture of openness, creativity and light, where the tree is a frail and vibrant shoot that establishes a link between the earth and the sky.*



Emily Carr (1871-1945)
Fir Tree and Sky
circa 1935-36 oil on canvas, 102.0 x 69.0 cm

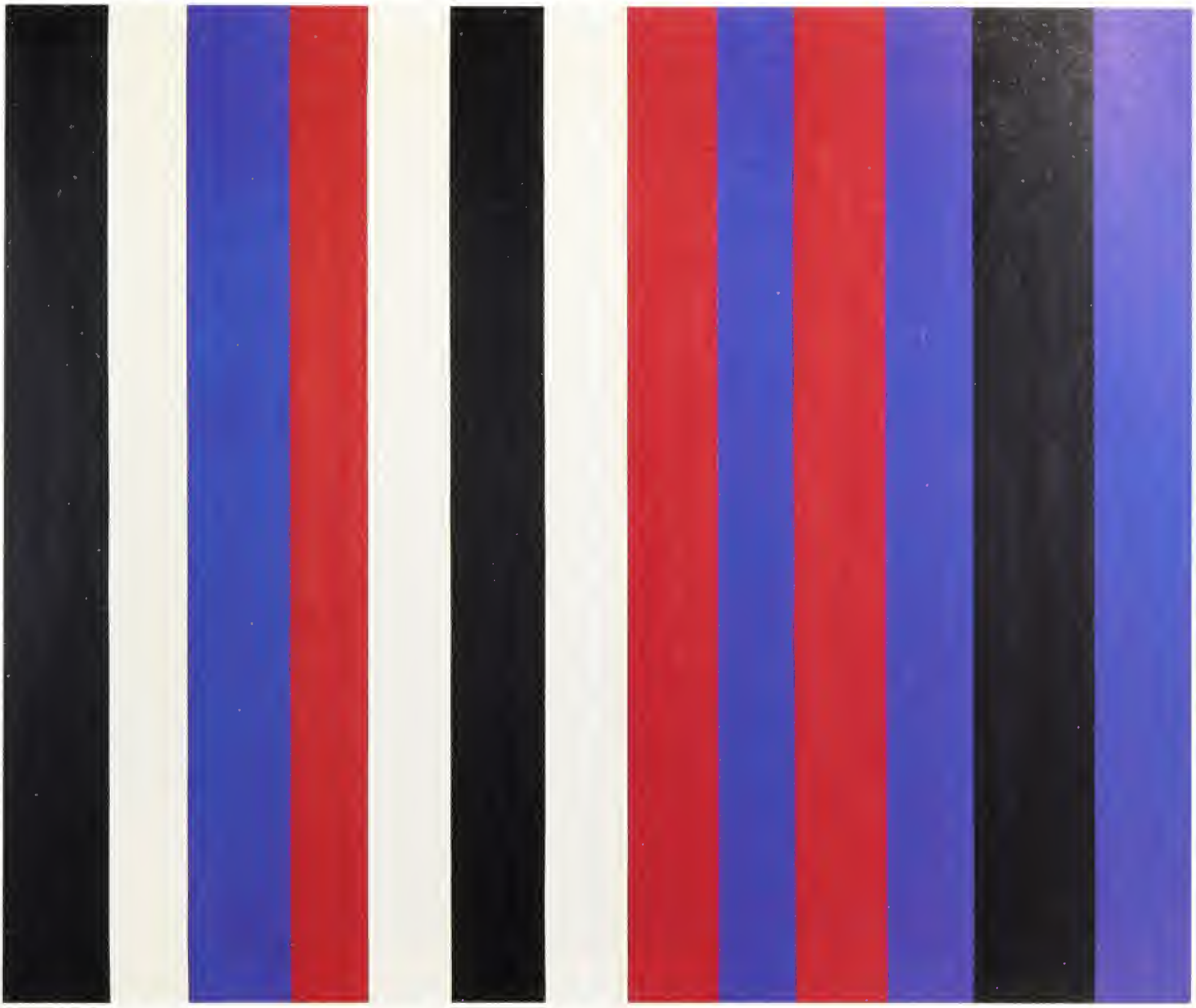
National Gallery of Canada, Ottawa
Bequest of Mrs. J.P. Barwick (from the Douglas M. Duncan Collection, 1985)

Emily Carr is one of many Canadian artists who have worked independently of fashionable style, often in great isolation and with severe hardships. Living most of her life in British Columbia, Carr was profoundly attached to the landscape and the Native Indian totem poles on the northwest coast. ***Fir Tree and Sky*** *is a painting where the sky is animated and swirling around the solitary and resolute tree. In much of Carr's work, as in this painting, there is an impulse to show a unity of all things physical and spiritual.*

Paul-Émile Borduas (1905-1960)
L'étoile noire 1957
oil on canvas, 162.5 x 129.5 cm

Collection of The Montreal Museum of Fine Arts
Gift of Mr. and Mrs. Gérard Lortie, photo · Christine Guest, MMFA.

An important figure in Canadian abstract painting and an influential leader in Montreal's art scene of the 1940s and 50s, Paul-Émile Borduas was a member of what came to be called **Les automatistes***. Influenced by the ideas of the French surrealists, Borduas was one of a group of young painters in Quebec in the 1940s who pursued "non-preconceived writing in paint". Their ideas led to a call for a radical reorganization of society as well as a vigourous abstract art movement.* **L'étoile noire** *is a later work by Borduas, painted in Paris, France, that concentrates on the structural organization of thickly painted areas of black and white paint.*



Guido Molinari (b. 1933)

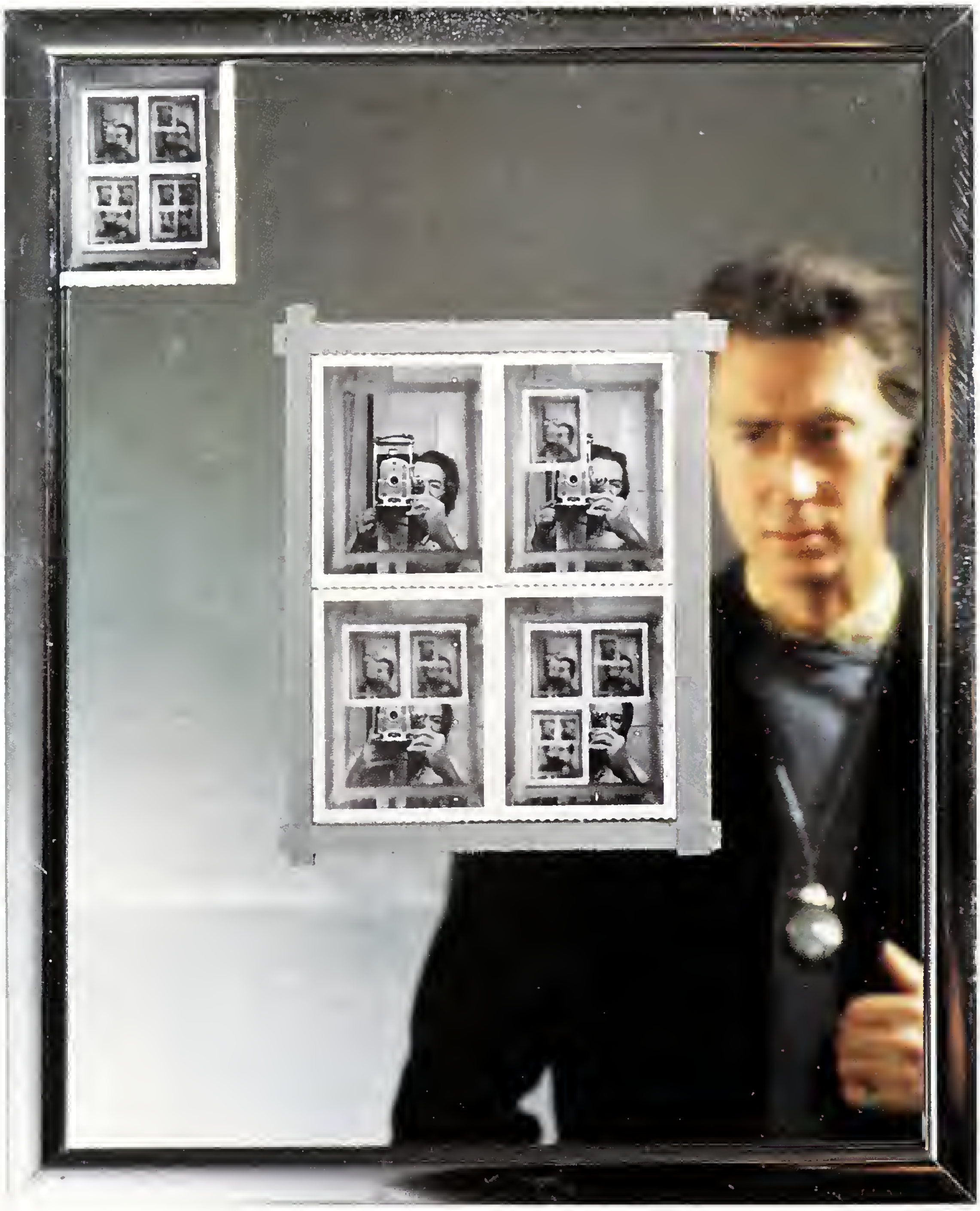
Hommage à Jauran 1961

acrylic on canvas, 149.3 x 176.2 cm

Collection of the Vancouver Art Gallery

©Guido Molinari 1991/VIS*ART Copyright Inc

In the art scene of Montreal of the early 1960s, Molinari conceived of making paintings that attempted to explore "the intrinsic potential of colour as a means of creating a vibratory space, in which the same colour would have a different function according to its position in the structure." ***Hommage à Jauran*** *is a seemingly simple stripe painting that reveals a complex structure of four colours reiterated across its surface. In this work Molinari explores new co-ordinates of spatial tension and begins a long series of stripe paintings that are about the ability of the viewer to perceive and attend to similarities and differences in simple structures. Painting of this sort challenges the viewer to establish an identity for the work of art, and by projection, to assist in constructing the viewer's own identity.*



Michael Snow (b. 1929)

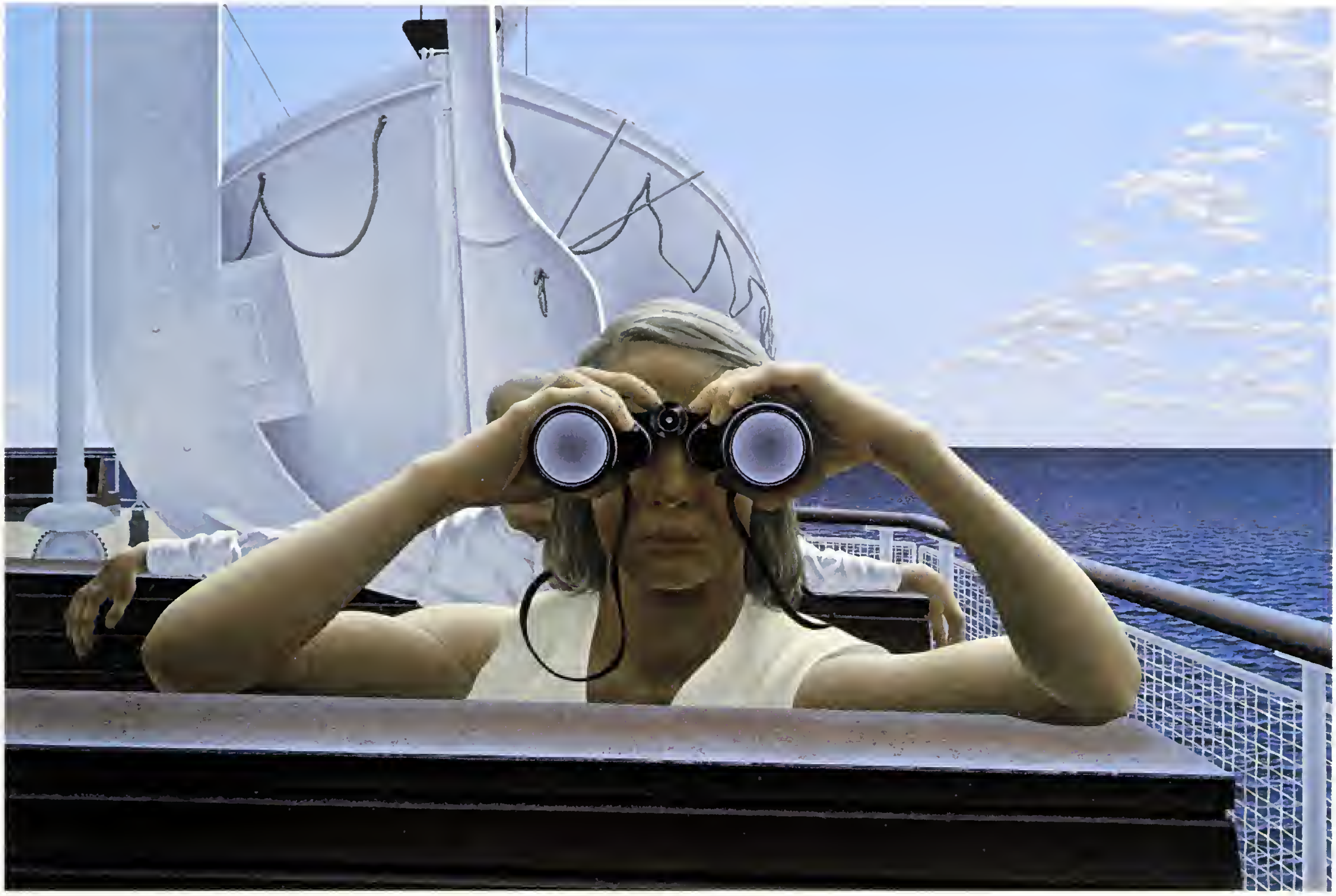
Authorization 1969

Black and white photographs and cloth tape on mirror in metal frame, 54.6 x 44.4 cm

National Gallery of Canada, Ottawa

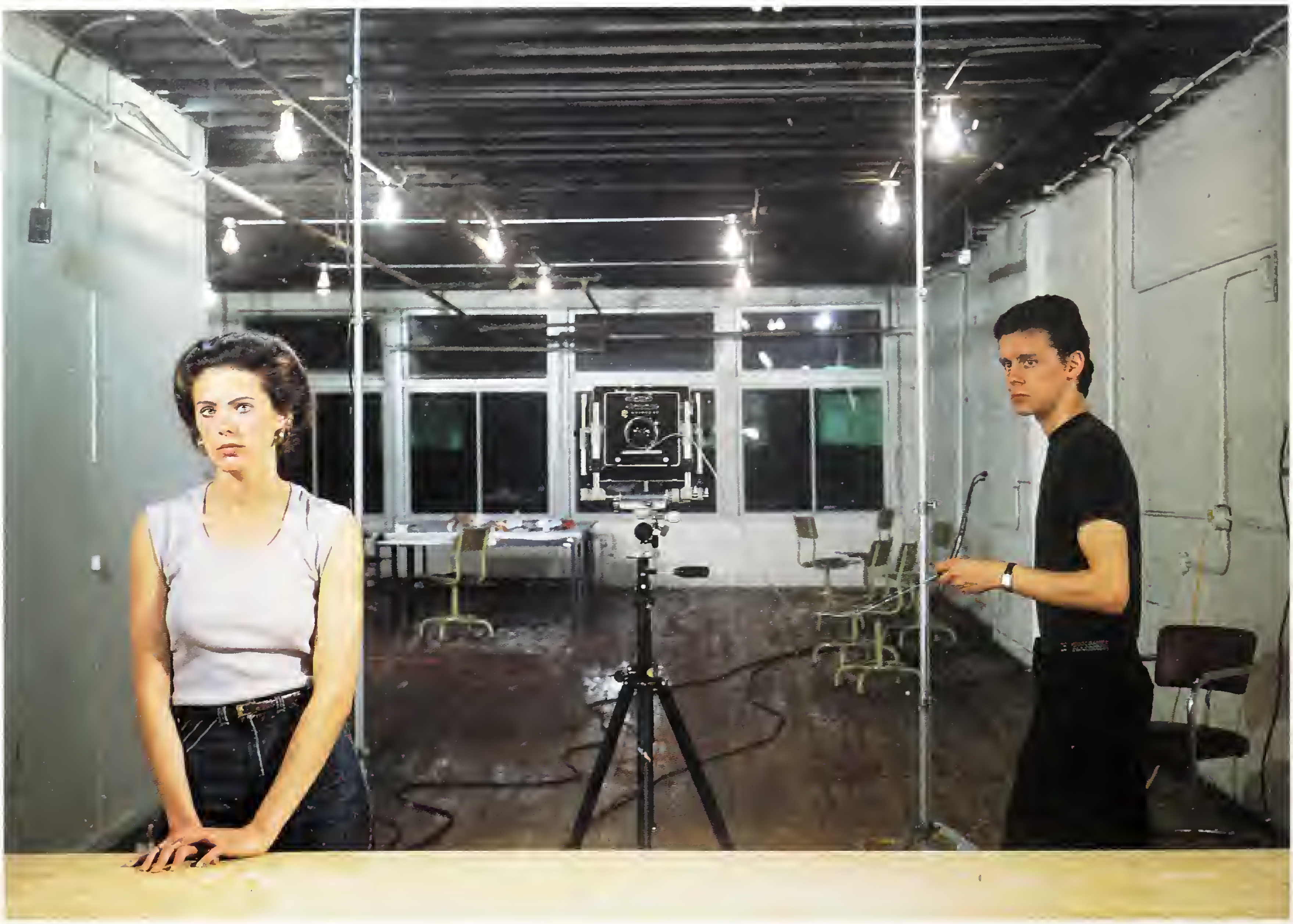
©Michael Snow 1991/VIS*ART Copyright Inc.

Working freely in many media, Michael Snow is an acclaimed filmmaker, sculptor, musician, and conceptual artist who combines resolute perceptual investigation with a tenacious wit. ***Authorization*** *is a work that reveals the process of creating itself. A polaroid camera was set up in front of a mirror and Snow took a picture. He then glued the photograph to the top left of the area taped-off in the centre of the mirror and shot again. The second photograph includes himself and also the first shot glued to the mirror. The process was continued until the fifth image, which was glued to the upper left corner of the mirror. The focus of the camera in each case is Snow the photographer, seen in the mirror, and not the plane of the mirror where each photograph is attached. The viewer is implicated into the process of the work through the re-imagining of the manner in which the work was made. The viewer is also integrated into the piece by the fact that the art itself includes a mirror.*



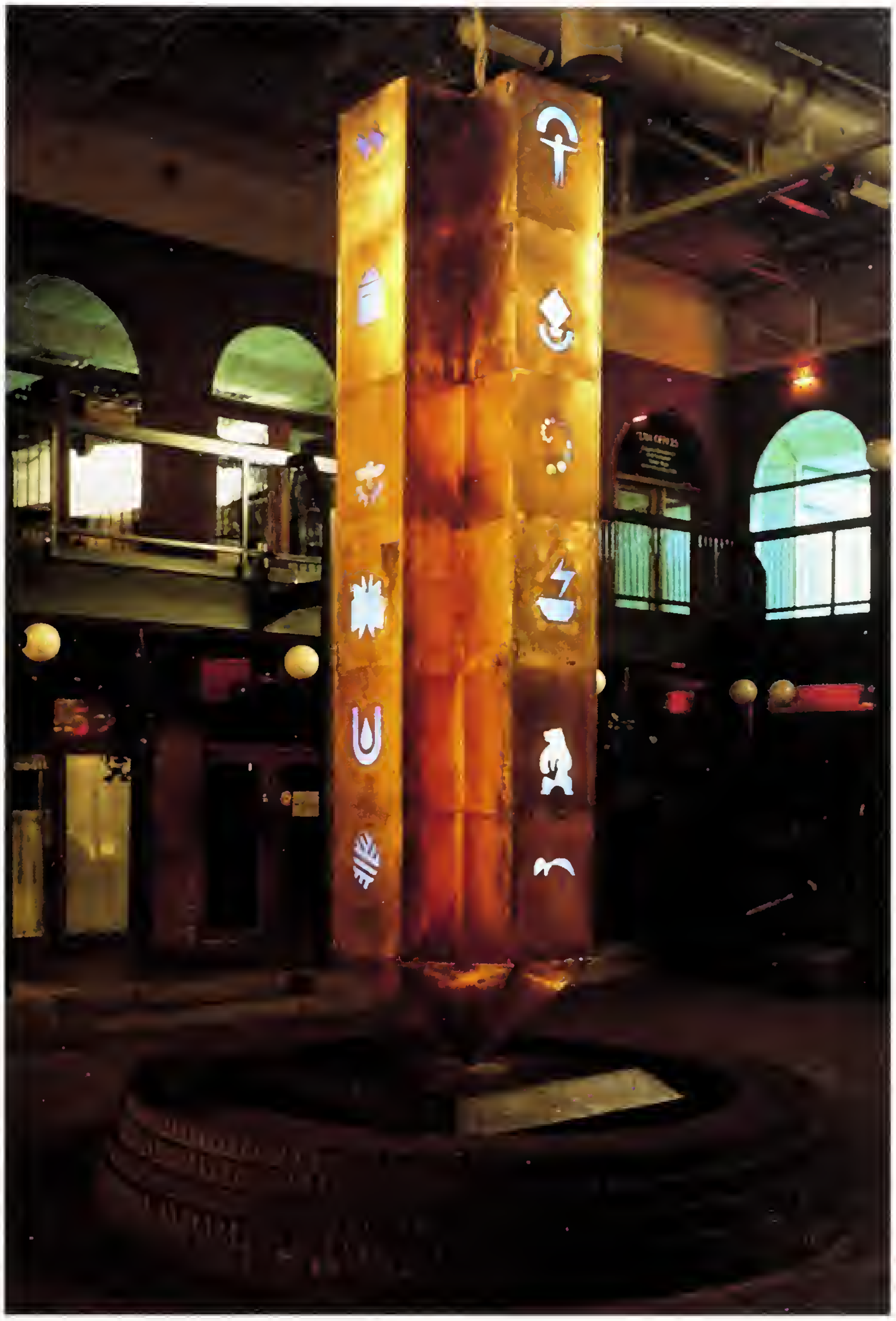
Alex Colville (b. 1920)
To Prince Edward Island 1965
acrylic emulsion on masonite, 61.9 x 92.5 cm
National Gallery of Canada, Ottawa

Alex Colville has painted images of Canada in his characteristic ghostly, realistic way for over 40 years. In looking at **To Prince Edward Island***, it takes a while to realize that we do not see the eyes of the two persons travelling on a boat on a sunny day. The woman looks directly out at the viewer through binoculars and the man is masked behind her. The two are travelling on a boat, with a lifeboat also in the picture. The directness and incontrovertible focus of the central figure watching us through binoculars makes us feel uneasy, and the hiding of the man behind the image of the woman is ominous. In somehow anxiously focusing on the observer and through the inexplicable overlapping of elements in space, this painting is about the self-awareness of people.*



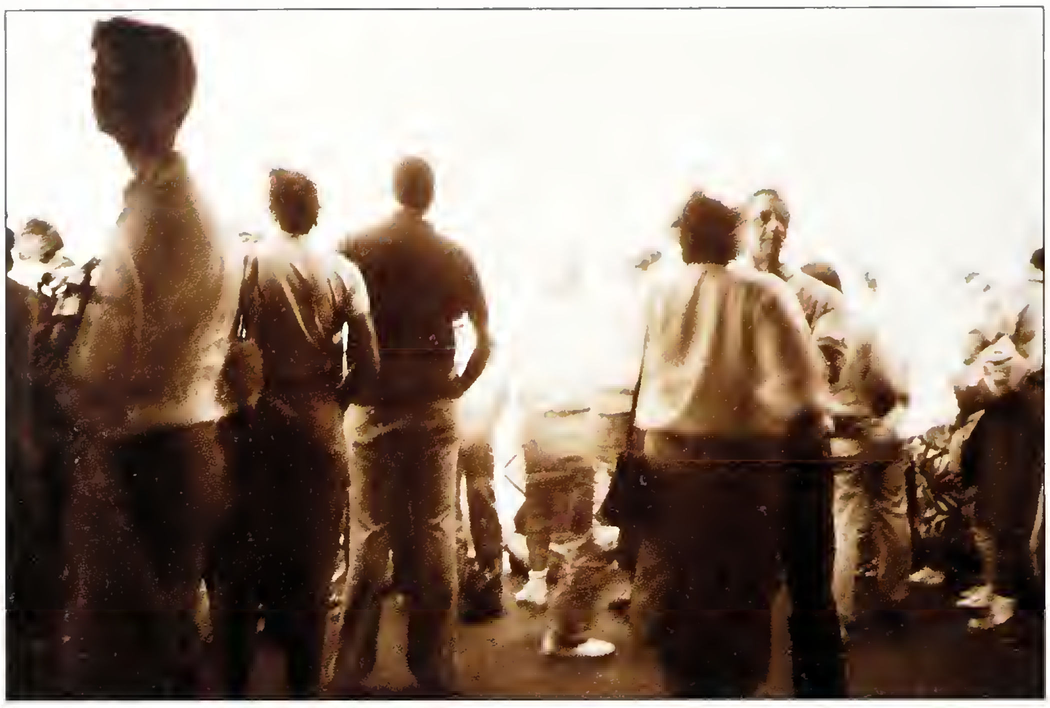
Jeff Wall (b. 1946)
Picture for Women 1979
cibachrome transparency, fluorescent light, display case, 163 x 229 cm
Collection of the Musée nationale d'art moderne, Centre Georges Pompidou, Paris

Jeff Wall's large photographs are displayed in light boxes like contemporary public outdoor advertising signs. Concerned with understanding how we see and know ourselves, Wall uses photography as a picturing tool in a strategy to think about identity and distance. ***Picture for Women*** *is a photograph taken in a mirror, showing the camera at both the centre of the picture and at the centre of the perspective of the room, the so-called 'vanishing point'. The artist himself is seen taking the photograph while looking at the woman. The woman looks at the viewer, and the camera is in the middle of everything. The play of identity and distance is made even more fascinating as the photograph is enlarged to the scale where the figures are almost life-size.*

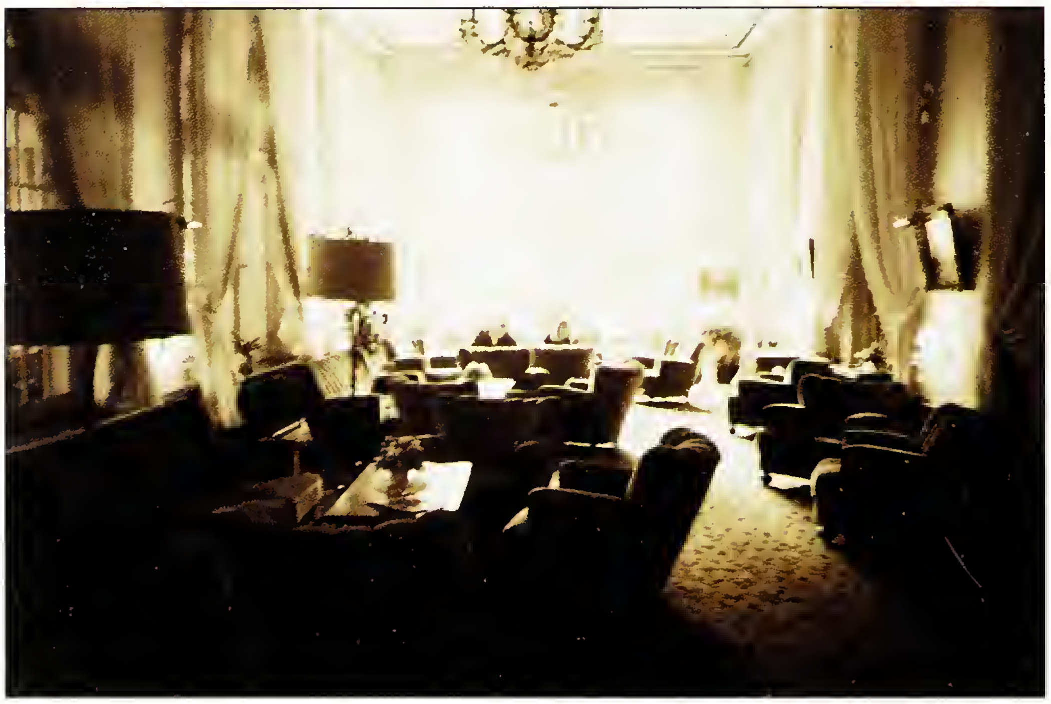


Stacey Spiegel (b. 1955)
Oracle 1985
televisions, copper, wood

Stacey Spiegel uses technology in his art to relate machines to themes of communication, the body, and human spirituality. **Oracle** *was first created for an exhibition of works of art that had a sound component. This tower of symbols, light and sound is a language generator. Receiving ambient television signals which depend on where and when the sculpture is seen, the television monitors re-transmit this 'noise' of colour and sound through logo-like symbols. By referring both to an ancient obelisk and contemporary television towers and antennas, the artist is reflecting on the density and diversity of language information that we receive today. The sculpture's title* **Oracle** *refers to the idea that electronic TV information and logo graphics are part of our visual environment which the spectator might 'read' to know the present and divine the future.*



Angela Grauerholz (b. 1952)
Crowd 1990
cibachrome



Angela Grauerholz
Hotel 1990
cibachrome

In an unusual way, the photographs of Angela Grauerholz **blur** *the portraits of people and places she sees. It may be suggested that Grauerholtz's photographs are 'photographs about our future memories of the present'. The photographs cast doubt on experience, rendering a glance at something familiar but leaving the memory of the image unsure. And for their apparent indeterminacy, the works do not clearly represent the subject but tell a story about things passing by, passing away, emptying out. To charge the image with so much sense of time and uncertainty also demands that the spectator assume a role in their interpretation.*

Chapter 21

Courtesy National Arts Centre

THE ARTS

21.1 INTRODUCTION

National Archives of Canada/C-12129

Scene from the Royal Canadian Academy of Arts, 1880.

DESPITE CANADA'S YOUTH AS A NATION, its culture is as diverse and distinct as its people. Canadian artists have created their own niche in exploring themes that are part of the individual and collective search for a truly Canadian identity. As a result, their work is not only an enduring reflection of their own personal journey, but a mirror of the country's continuous development and emerging identity.

Although Canada is still a young country in comparison to other nations, its artistic maturation over the past century alone has been remarkable. Today, many of the country's authors, filmmakers and performing artists are renowned throughout the international arts community.

Indeed, the arts in Canada date to long before the first European settlers arrived. Canada's Indian and Inuit peoples fashioned the land's first musical instruments, took part in its first dances and told the stories of its early history.

Song, dance, mime and other forms of artistic expression were essential parts of native tradition and ritual. Some tribes performed great cyclical dramas that lasted four or five months; others used song and dance in ceremonies to summon religious or magical spirits, to ask for guidance or even to look into the future.

In the 17th century, settlers began arriving in Canada, mostly from Europe, bringing with them the cultural traditions of their homelands. Gradually, these settlers combined elements of the old culture with ingredients from their new lives, building a unique heritage that mixes traditions — a mosaic in which each element stands on its own, yet is part of the whole.

Today, Canadians spend the majority of their leisure time enjoying some kind of cultural activity. In fact, the only thing the average Canadian spends more time on than cultural activities is sleeping.

Revenue Cultural activity contributes much to Canada's economy. Activities related to it make it Canada's fourth largest employer after forestry, agriculture and mining. In 1985, the culture section had a workforce of 307,000 people and direct revenues of about $10 billion. The indirect economic effects of cultural industries are between $15 billion and $20 billion.

Funding The Canadian government recognizes the importance of culture not only as an industry, but as an integral component of the Canadian character. All levels of government support the arts. In 1988-89, federal, provincial and municipal governments spent a total of $5.3 billion on culture, representing 1% to 2% of their total budgets.

The federal share amounted to $2.8 billion, with the operating and capital budgets of federal cultural departments and agencies accounting for 86% of this total. Grants and contributions to artists, cultural industries, institutions and organizations accounted for the remaining 14%.

On the provincial level, $1.6 billion was devoted to the arts; 60% of this went to financial assistance for artists and organizations and 40% covered operations and capital spending.

JUST FOR LAUGHS...

Canada has contributed much to the world of live comedy, and its major comedy festival brings together the best of the world's "stand-ups" every July in Montreal. The *Just For Laughs International Comedy Festival* began in 1982 as a one-night French-language show and has grown into a 10-day, citywide event, with entertainment in both English and French. Attendance has nearly doubled each year, and the 1990 event attracted more than 500,000 people. In addition to Canadian comedy, more than 250 acts come from countries including France, Belgium, Spain, Scotland, England, Australia, New Zealand, and the United States.

Another laugh landmark is Yuk Yuk's International Stand-Up Comedy club, which began in 1976 as a one-night-a-week experiment in a converted church basement. Now more than 20 clubs across Canada provide showcase opportunities for comedians from Canada and other countries. In fact, Yuk Yuk's is one of the world's largest chains of comedy clubs.

Two years prior to the start of Yuk Yuk's, the Second City Comedy Cabaret set up a permanent Canadian company in Toronto's Old Firehall, capitalizing on the original Chicago company's tours in Canada. Second City moved into television with the show *SCTV Network*, now syndicated across North America.

National Archives of Canada/PA-152177

Wayne and Shuster on the radio.

While two-thirds of the federal total was spent on cultural industries such as broadcasting, recording and publishing, two-thirds of provincial cultural spending went to heritage activities and libraries.

Libraries also received the majority of funding from municipal governments — four-fifths of the $994 million spent in 1988-89.

Taking inflation into consideration, the federal culture budget increased by 2% from 1987-88 to 1988-89, the provincial budget rose 4%, and municipal spending on culture increased by nearly 7%.

Federal and provincial initiatives Recognizing that funding is a chronic problem in the arts community, the federal and provincial governments offer various kinds of assistance. Federally, the Department of Communications has developed a number of programs to address the needs of artists and arts organizations.

In 1986, federal and provincial governments began a joint study on the economic importance of the arts. At the same time, task forces examined the economic situation of artists and arts organizations and the Bovey Commission was appointed to investigate broader arts funding issues. In 1987, a seven-member advisory committee was appointed to study the status of the artist.

A relatively recent development in Canadian arts policy is the inclusion of artistic or cultural development projects in federal-provincial Economic Regional Development Agreements (ERDAs).

In 1990, a Co-operation Agreement on Cultural Development, the first of its kind in Atlantic Canada, was signed by the federal government and Prince Edward Island. The four-year $3.6 million agreement is one of eight agreements under the Co-operation Program, which supports long-term economic development projects related to artistic or cultural endeavours in Atlantic Canada.

A similar agreement was reached with New Brunswick in 1990; over a five-year period, $5 million will be allocated to the province's cultural sector.

Other provinces are also involved in ERDAs. In 1985, Quebec received $40 million to support cultural foundations such as the Montreal Museum of Fine Arts. This agreement was later extended to March 1991 and increased by $33.5 million.

The provinces also administer and/or fund a variety of cultural organizations and institutions. These include arts and cultural centres, arts councils, museums, archives, public libraries and historical parks.

Through these programs, the provinces promote their culture and heritage and help individuals and community groups achieve their creative goals by offering consultation and resource services, work and exhibition space, or financial assistance.

Canada Council Perhaps one of the most significant government initiatives in the arts was the founding of the Canada Council in 1957. In 1949, the Massey Commission had recommended that the government begin supporting culture through an arts council. The creation of the Canada Council was a turning point in Canadian culture, and led to an influx of exciting new work.

Run by a 21-member board of directors, the Council awards about 4,200 grants every year to organizations and individual artists working in dance, music, opera, theatre, writing, publishing and visual and media arts. In addition, it administers more than 100 support programs, which are modified regularly to meet the changing needs of the arts community. The Council also acknowledges exceptional contributions to the arts through a number of prizes, including the Governor General's Literary Awards and the International Glenn Gould Prize for music.

Annual grants from Parliament provide approximately 90% of the Council's budget. In 1989-90, the Council had a budget of $113 million, of which $103.5 million was a Parliamentary grant.

21.2 PERFORMING ARTS

The introduction and rapid growth of film and television in the 1950s was perceived to be the first formidable competition for the performing arts, which include theatre, dance and music. However, television did not have the expected effect on performing arts attendance: instead of dropping, attendance in all areas of the performing arts has increased.

In 1988, 13.8 million people attended performing arts events in Canada. Some 37,700 performances were given by 369 Canadian arts companies. Revenues earned from these performances totalled $144 million.

The number of performing arts organizations varies from year to year; organizations are continually folding or being founded. Statistics Canada's survey of performing arts companies covers most of the country's major professional, non-profit companies. In 1988, these organizations included 220 theatre companies, 88 music organizations, 48 dance companies and 13 opera companies.

Sound recording The sale of records, tapes and compact discs totalled $334 million in 1988-89, an increase of 23% over the previous year.

The value of sales is expected to keep increasing as buyers continue to move toward compact discs, causing sales of albums and singles to decline. In 1988-89, compact discs accounted for 26% of the market, compared with 12% in 1986-87, while albums and singles dropped to 22% from 59% in 1983-84. The market share of tapes has remained steady since 1985-86 at about 52%.

Rock or rock-oriented music accounted for 66% of vinyl, tape and compact-disc sales. Radio surveys show that rock is most popular among the 18-to-24 age group.

Compact discs were initially aimed at an older audience, able to pay a higher price for higher-quality sound. This audience was primarily interested in jazz and classical music and in 1988-89 sales of these recordings were more than 20% higher than in 1983-84.

HISTORY

Theatre Theatre is the most prominent of the performing arts in Canada. Professional companies across the country give more performances than in all other performing disciplines combined.

Canada's theatrical beginnings were shaped by settlers, religious groups and the British and French military. Theatres were built as early as 1789, and by the 19th century, live theatre was growing rapidly. This was the 'touring era,' and strong competition from touring foreign companies meant that most Canadian companies were small and amateur. Companies from around the world performed in Canadian theatres, but when the Depression hit, touring came to an abrupt halt.

THE STRATFORD FESTIVAL

Canada's Stratford Festival is renowned internationally, and millions of people have made the pilgrimage to its annual celebration of fine drama and music.

Located in Stratford, Ontario, on the banks of the Avon River, this festival is ranked among the three great theatres of the English-speaking world, with the largest repertory company in North America. Festival productions have travelled to several continents, and since 1956, have been televised regularly, to millions of viewers across North America.

The idea for the festival began in 1951, when a home-town journalist named Tom Patterson started a committee to explore the idea of an annual festival. The following year, a foundation to administer the festival was incorporated, and leading British director Tyrone Guthrie agreed to be artistic director. In 1953 a tent theatre provided the site for two Shakespearean plays: *Richard III* and *Love's Labour Lost*.

Stratford now offers yearly classical and modern plays and music productions in three theatres, the main theatre seating close to 2,300 people, all within 20 metres of a stage that is a much-copied modern interpretation from Elizabethan theatre. The Avon theatre seats 1,100, and the smaller Third Stage is used for workshops, experimental plays and actor training.

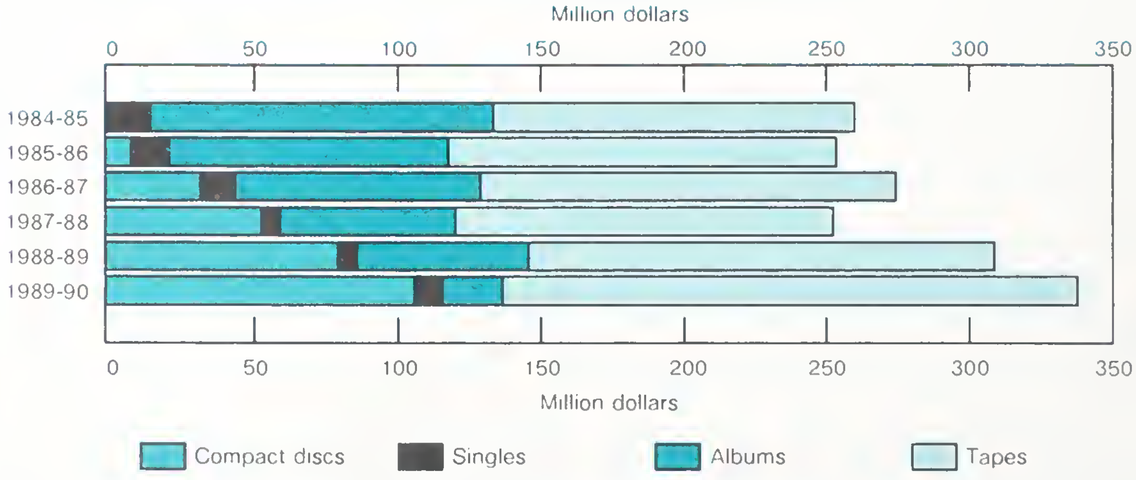
National Film Board/National Archives of Canada/PA-156502

Stratford Shakespearean Festival with Alec Guinness and Amelia Hall in "Richard III," 1953.

Canada's transition from amateur to professional theatre began in 1953 with the founding of the Stratford Festival. Although there was a subsequent surge in construction of theatres, many Canadian plays were better suited to smaller venues. Consequently, in the late 1960s smaller companies formed as alternatives to established regional or national theatre companies.

Chart 21.1

NET SALES OF RECORDINGS, BY FORMAT



In the 1970s, hundreds of new Canadian plays were produced after the Canada Council implemented a 50% Canadian content regulation for Canadian theatres. In the early 1980s, a worsening economic situation forced many theatre companies to fold. However, with the worst over by 1984, many fringe and regional theatres were able to survive through co-productions. Today, there are some 220 theatre organizations across the country.

Dance Canadian dance is distinct, but its roots can be found in the traditions of many other nations. All three of Canada's major dance companies — the National Ballet of Canada, the Royal Winnipeg Ballet and Les Grands Ballets Canadiens — were founded by immigrants who had been dancers and teachers in their homelands.

In the 18th and 19th centuries, dance, like theatre, was 'imported' to Canada via touring companies. Professional dance, however, did not develop until the 1930s. Canada's three major companies were founded between 1939 and 1952.

Increasing public interest in dance and the introduction of funding from the Canada Council led to rapid growth in the 1960s and 1970s, a period in which modern dance became increasingly popular.

With the 1981-82 recession, funding for most companies diminished. Despite these economic constraints, independent Canadian choreographers began to emerge, and several educational centres were founded in the late 1970s and early 1980s.

Music In the 17th century, simple folk and dance tunes formed the basis of Canada's musical identity, complemented by religious and patriotic music.

In the 1840s, teaching studios, musical societies and publishing firms began to appear, laying the foundation for the institutional framework that exists today. At Confederation, every city and town had several musical societies; by the turn of the century, choirs, conservatories, festivals and semi-professional orchestras was flourishing. Before World War I, a large proportion of Canada's professional musicians and composers had been trained in Britain, and this strongly influenced Canadian music.

Musical progress slowed during World War I and II. In the 1950s, television brought music to wider audiences; and the number of Canadian performers multiplied.

By Canada's centennial in 1967, the country's musical scope had broadened considerably.

Canadian singers and songwriters played a major role in the "folk boom" of the 1960s. When 30% Canadian content regulations were introduced in the 1970s, Canadian music and musicians gained increased access to Canadian airwaves.

The 1970s and 1980s marked the rise of Canadian rock groups, many of whom capitalized on television programs catering to the "video generation".

Canadians are prominent in every type of music, from classical to country and western. Several major Canadian cities support symphony orchestras, and opera attracts large audiences across the country.

FUNDING

Most performing arts companies cannot earn enough money to meet their expenses and thus must depend on grants and donations, which totalled $149 million in 1988.

Grants represent about half of total revenues for performing arts organizations. In 1988, the federal government provided 33% of all grants and subsidies, 26% came from the provinces and municipalities contributed 10%. This reliance on external funding leaves performing arts organizations vulnerable to changing economic conditions. Historically, in times of economic hardship, the arts have been among the first to suffer funding cuts. In an era of government restraint, responsibility for funding the arts has been shifting to the private sector.

In 1988, the private sector provided 31% of all performing arts grants, compared to 22% in 1978. The main private funding sources are foundations, corporations, individuals, volunteer campaigns and bequests or endowments.

Performing arts organizations earn revenue primarily from box-office sales, but also from guarantees, and from program, souvenir and beverage sales. The average earned revenues per performance in 1988 were: $2,362 (theatre), $12,470 (music concerts), $6,833 (dance) and $18,762 (opera). In the same year, total costs per performance were $4,326 (theatre), $26,873 (music concerts), $16,061 (dance) and $46,416 (opera).

Personnel costs accounted for approximately 55% of average company expenditures, ranging from a low of 44% for dance companies to a high of 65% for music. Publicity and administration each represented between 5% and 11% of total expenses, depending on the discipline. Production costs — such as sets, costumes, props, technical equipment and tickets — accounted for 19% of theatre costs, 12% for music, 28% for dance and 18% for opera.

National Arts Centre The National Arts Centre (NAC) is the largest performing arts complex in Canada and offers North America's only bilingual, multidisciplinary program.

Simpson Bros./National Archives of Canada/PA 164643

Conservatory of Music concert performers, Toronto, 1888.

Andrew Oxenham/Courtesy National Ballet of Canada

Rex Harrington in the National Ballet of Canada production of *Sphinx*.

W.J. Topley/National Archives of Canada/PA-136767

In the 1880s, many art galleries relied on a coal stove for "climate control."

Each year, the NAC hosts more than 900 performances with a total attendance of more than 700,000. The Centre's three stages have a combined seating capacity of almost 7,000. Smaller performance spaces include the Salon and the off-site Atelier, a satellite theatre that provides workshop space for theatre, dance and variety productions. Located in Ottawa, the Centre was founded in 1967 as part of Canada's centennial celebration.

The Centre's 46-member chamber orchestra is internationally acclaimed and gives concerts at the Centre as well as throughout Canada and abroad. In addition to commissioning new works, the NAC's music department schedules about 125 concerts annually, covering every musical genre.

The NAC's English and French theatre departments offer close to 600 performances annually. The departments attract Canada's leading theatre artists and regional companies.

The diversity of the Centre's dance productions is unequalled in Canada. Constantly breaking new ground, the program is a balance of classical ballet, modern and jazz dance.

The variety department has brought the world's biggest names to the NAC stage. Some 100 performances by contemporary singers, musical companies and other variety performers are staged annually.

Half of the NAC's operating costs are provided by the federal government. The balance is covered by revenues from ticket sales, performance hall rentals and leases, fundraising activities and restaurant and catering operations.

21.3 THE NATIONAL COLLECTION

National Gallery of Canada One of the most stunning arrivals on the Canadian arts scene has been the new National Gallery of Canada, designed by renowned Montreal architect Moshe Safdie. Soaring above the capital's skyline, this shimmering structure of glass, steel and concrete houses the world's most comprehensive collection of Canadian art — two-thirds of the Gallery's 41,000 works are Canadian. The Gallery also has one of Canada's best collections of European art.

Completed in 1988, the new Gallery features many distinct gallery spaces for permanent installations, special exhibitions, lectures, films, guided tours and special performances.

Although not officially founded until 1913, the Gallery dates back to an 1880 exhibition held by the future members of the Royal Canadian Academy of Arts. Each member donated one of their own works, which formed the early nucleus of the Gallery's collection.

As its acquisitions grew, the Gallery occupied four temporary homes. Most of these were shared with other government agencies — in 1882, for example, the Gallery shared a two-room workshop on Parliament Hill with the Supreme Court of Canada.

Through numerous purchases and donations, the Gallery now owns a wide range of paintings, sculptures, prints, drawings, photographs, videos and films.

21.4 LITERATURE AND PUBLISHING

Canada's immense distances and dispersed population made early publishing ventures difficult. At the same time, Canadian publishers had to compete with older, better established firms in Great Britain and the United States. Despite these obstacles, publishers of Canadian prose and poetry have flourished.

In 1988-89, Canada's 307 active publishers (publishing regularly and earning at least $50,000 per year) had book sales totalling $1.1 billion, a 9% increase from 1987-88.

Almost 55,000 titles were in print, including tradebooks, textbooks and information titles. In 1988-89, 7,550 new titles were published, two-thirds by Canadian authors. In addition, nearly 5,200 Canadian-authored titles were reprinted.

THE GROUP OF SEVEN

Canada's Group of Seven are famous for their rich interpretations of Northern Ontario landscapes. While the group was together for only about a decade, its contribution to Canadian art is significant and enduring. The first Group of Seven exhibition took place in Toronto in 1920, and the popularity of its works was secured when the National Gallery of Canada began buying members' paintings for the Gallery's permanent collection.

Original members — Lawren Harris, A.Y. Jackson, Arther Lismer, J.E.H. MacDonald, Frederick Varley, Franz Johnston and Franklin Carmichael — were inspired by the style and views of Tom Thomson, a Canadian artist and outdoorsman with whom they painted prior to his death in a canoe accident in 1917. Later members were A.J. Casson, Edwin Holgate and L.L. Fitzgerald.

The work of the Group of Seven has provided Canadians with a new way of viewing the land. Dominated as they are by the artist's feeling for the subject, these works represent a departure from more realistic landscape interpretations.

Today, a prominent part of Canada's National Gallery is devoted to their works and originals and reproductions hang in hundreds of Canadian public galleries, public institutions and homes.

National Gallery of Canada

Canada's Group of Seven photographed at luncheon, Arts and Letters Club, Toronto's Old Court Lane: front, left to right: F. Horsman Varley, A.Y. Jackson. Back, left to right: Lawren S. Harris, Prof. Barker Fairley, Frank H. Johnston, Arthur Lismer, J.E.H. MacDonald.

The Canadian-controlled publishing industry expanded in the 1980s. In 1988-89, 273 Canadian-controlled publishing houses had incomes over $50,000, compared to 207 in 1982-83. Sales almost doubled over the period, reaching $670 million in 1988-89. Even when inflation is taken into account, sales revenue increased 44%.

English- and French-language publishers shared in this expansion, taking advantage of financial assistance offered by various levels of government and by public and private organizations.

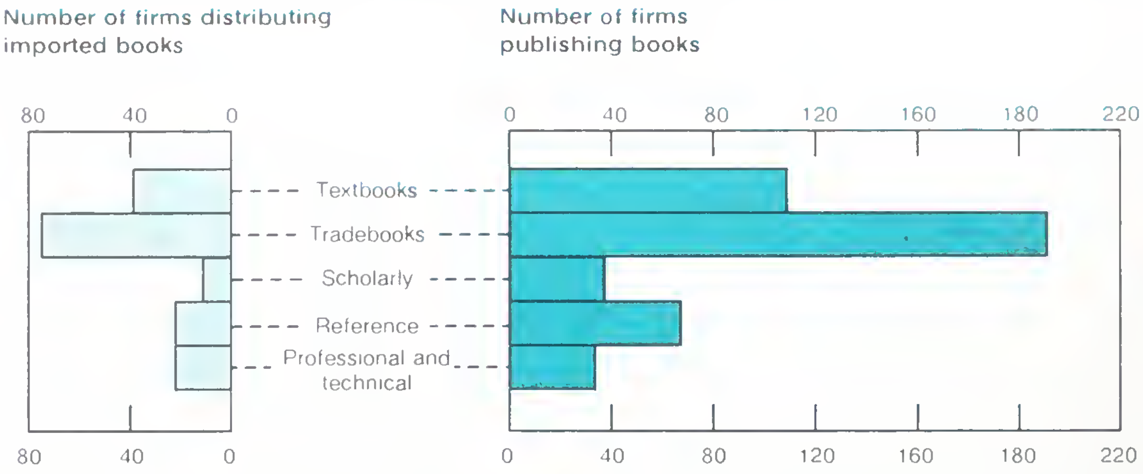
HISTORY

Literature Before books became common, people learned by listening: literature has its roots in storytelling.

Many early Canadian writers continued the oral tradition, using storytelling techniques in their writing. Some gave their characters a particular dialect; others made use of Indian myths or European folklore.

Chart 21.2

PUBLISHING FIRMS IN CANADA, 1988-89



Canada's early literature also included poetry, political satire, autobiography and the journals of travellers, explorers and settlers. However, most of this work was highly derivative, based on European models. Before World War II, many Canadian writers consciously struggled to find a way of expressing themselves that was distinctly Canadian.

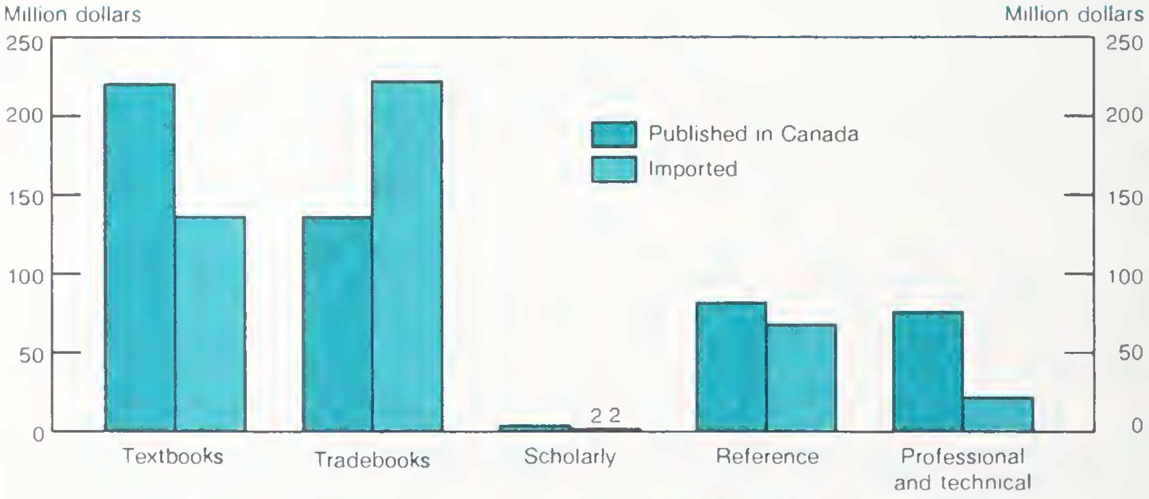
The 1950s and 1960s brought a general surge of creativity in Canadian writing. The Canada Council was formed, professional societies were founded and literary festivals began to be held. Many publishing ventures were launched and the audience for Canadian literature expanded. Canadian writers also began to receive more attention from the academic world.

By the 1970s, many Canadian writers were in the international spotlight and a distinct national literature had emerged. In the 1980s, Canadian writing increasingly reflected the breadth and diversity of the nation, with authors from a range of ethnic backgrounds dealing with Canada in a way that encompassed language, history and ethnicity as well as geography.

Publishing Canada's first publishers were involved in every aspect of the printing process. They selected texts, did copy editing and proofreading and also printed and distributed their books.

Chart 21.3

SALES OF BOOKS IN CANADA



Modern-style specialized publishing houses were introduced to Canada in the late 19th century. Several American and British publishers opened branch offices in Canada, offering religious, trade and textbooks. By World War I, more than a dozen publishing firms were established and business was booming.

The Great Depression had a tremendous negative impact on Canada's publishing industries. Although there was a short period of recovery after World War II, the slump lasted well into the 1950s.

In the 1960s, small presses began to spring up across the country, but as rising publishing costs drove up book prices it became harder for Canadian publishers to sell Canadian books; most had to rely on sales of foreign books to survive.

Foreign competition is a serious problem for Canada's publishing industry — Canadian-owned publishing houses account for only 25% of the total domestic book market.

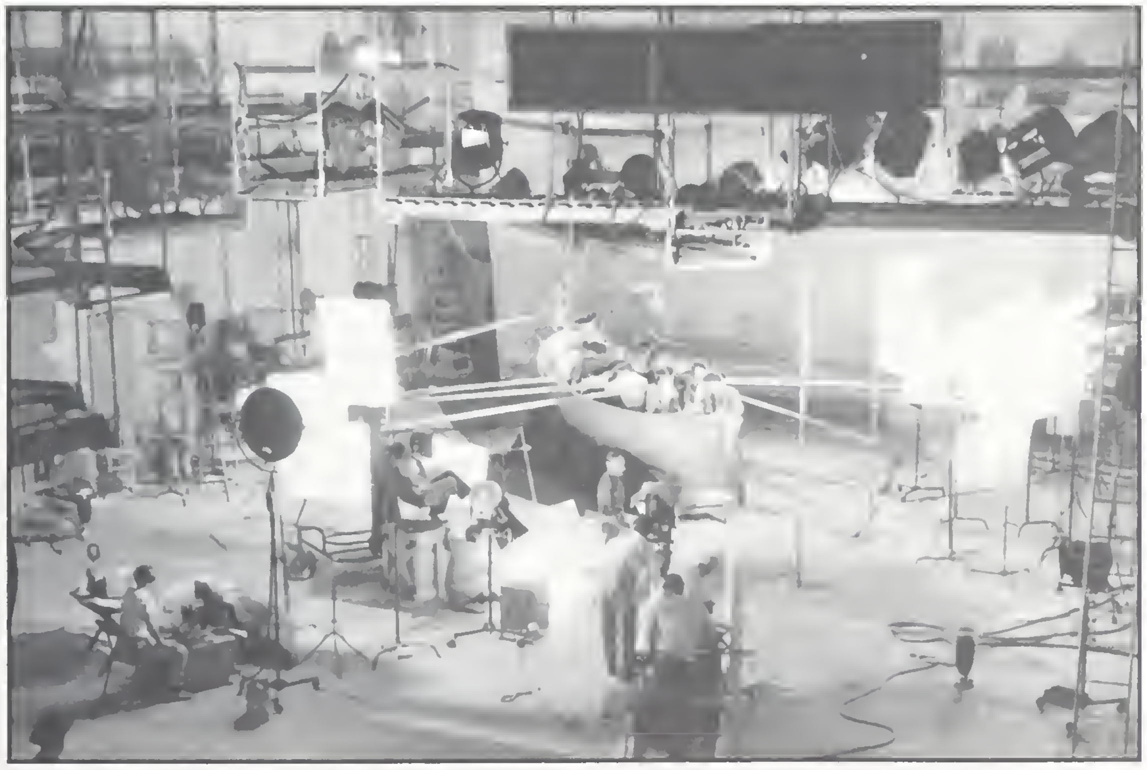
To effectively deal with foreign competition, the federal and provincial governments have created programs to boost Canadian-controlled publishing. In 1988-89, federal assistance to publishers was estimated at $26.8 million, and provincial assistance was about $5.7 million. Only publishing houses owned and controlled by Canadians and having a minimum number of Canadian titles in print benefit from this assistance.

About two-thirds of funding comes from the Canada Council and from the Department of Communications' Book Publishing Industry Development Program (BPIDP). Support is also given through the $33 million Cultural Industries Development Fund (CIDF). Administered by the Department of Communications and the Federal Business Development Bank, this fund was created in 1990 to help cultural industries that are unable to get venture capital through regular financing.

21.5 FILM

Managing Canada's film industry presents the unique challenge of encouraging domestic productions while also attracting foreign productions.

As in previous years, feature films (75 minutes or longer) accounted for less than 1% of Canada's new productions in 1988-89. However, the number of productions rose to 46 from 34 in 1987-88. Only 5% of the feature films distributed to theatres in Canada had some Canadian content.



National Film Board/National Archives of Canada/PA 169752

National Film Board production, 1956.

Most of Canada's 621 production companies focus either on productions under 30 minutes or on television commercials. Advertising agencies were the most important customers for film and video producers, accounting for $142 million, or 27% of total production revenue of

$527 million. Television broadcasters were the second largest customer, accounting for $93 million, while distributors — the principal buyers of theatrical productions — contributed $76 million.

Canada's movie theatre attendance peaked in 1952 with 256 million admissions. By the 1960s, television had become a fixture in almost every household and movie attendance declined sharply. Throughout the 1960s and 1970s, attendance ran at about 100 million. In the 1980s, it fluctuated between 75 million and 85 million; in 1988-89, it was 79 million.

Albertans were the most avid moviegoers in 1988-89, attending films an average of four times each during the year. Average attendance was lowest in New Brunswick, Prince Edward Island and Newfoundland, with less than two times a year per person.

In 1989, Canada's 773 movie theatres brought in $426 million in gross revenues.

HISTORY

Film production in Canada began in the early 1900s with a handful of small companies, many of which specialized in short films extolling Canada's virtues to potential immigrants. During World War I, many newsreels were produced, feature film production expanded and the number of Canadian-owned theatres and distributors increased.

However, production dropped off after the war. In the 1920s, most productions were brief inserts for American films. Only a few short films and documentaries were produced, mostly for government departments and private companies.

By the 1930s, most production and distribution outlets were foreign-controlled, and Canadian audiences rarely saw Canadian productions.

Canadian documentary filmmaking, however, was on the rise. Founded in 1939, the National Film Board quickly became the centre of the Canadian film industry. After its formation, there was a significant increase in documentary filmmaking, particularly during World War II when the NFB's films reached millions of viewers.

When the television boom began in 1954, many filmmakers turned to the NFB. This was particularly true of Quebec filmmakers — few French-language feature films were being released, and a number of documentary filmmakers from Europe were residing in Quebec.

The development of an inexpensive, highly mobile 16 mm camera in the 1960s led to a surge of low-budget Canadian films. This new technology coupled with the creation of the Canadian Film Development Corporation in 1967 were catalysts for Canada's fledgling feature film industry.

During the next decade, Canadian filmmakers, like so many of the country's young artists, struggled to find their own "voice" or vision. Several noteworthy films emerged from this period, and regional co-operatives across the country began to turn out some of Canada's most talented directors.

By the late 1980s, Canada's feature film industry had created a distinctive place for Canadian work in the international community. With government departments and agencies committing increasing resources to the industry, its future is even more promising.

FUNDING

Canada has the world's largest, most successful film production industry next door in the United States. Recognizing the problems this causes for Canadian film production companies, the federal government supports the industry in a number of ways.

In 1986, the government announced a five-year program administered by Telefilm Canada to promote domestic production and distribution of Canadian films. The program devoted $30 million per year to feature film production and distribution and an additional $3 million per year for dubbing or subtitling.

To increase the exchange of film and video productions between French and English Canada, the Versioning Assistance Program was created to fund dubbing and subtitling. This program is also administered by Telefilm Canada.

In 1988, the federal government provided an additional $200 million to assist the Canadian film industry until 1993. This money will be used to establish a Film Distribution Fund ($85 million) and a Film Products Importation Office ($5 million), and to fund National Film Board co-productions ($25 million), the Versioning Assistance Program ($15 million), non-theatrical film and video productions ($10 million), and the Canada Council's Media Arts Section ($3 million).

The government also offers tax incentives to stimulate film and video production. These include a 100% capital cost allowance and a tax deferral scheme.

CANADIAN FILM AWARDS

The first Canadian Film Awards were presented in Ottawa in 1949 to honour Canadian creativity, promote Canadian artists, and raise Canadian film standards. In years where no awards are listed, none were awarded or entries were not submitted in Film of the Year or Feature Film categories. The last Canadian Film Awards were given in 1978. In 1979, the Academy of Canadian Cinema was established to continue this work.

1949 – The Loon's Necklace, Film of the Year

1952 – Newfoundland Scene, Film of the Year

1953 – Tit-Coq, Film of the Year

1954 – The Seasons, Film of the Year

1955 – The Stratford Adventure, Film of the Year

1957 – Awards presented to individuals and groups for contributions to the film industry, including John Grierson, the Yorkton Film Council, Crawley Films Ltd. and Roy Tash.

1958 – City of Gold, Film of the Year

1961 – Universe, Film of the Year

1963 – Lonely Boy, Film of the Year

1964 – Pour la suite du monde, Film of the Year.
A tout prendre, Feature Film (new category, first awarded in 1964)

1965 – The Luck of Ginger Coffey, Feature Film

1966 – The Mills of the Gods: Viet Nam, Film of the Year.
Le Festin des morts, Feature Film

1967 – Warrendale, Film of the Year and Feature Film

1968 – Awards were reorganized to celebrate their 20th anniversary. Feature Film Craft awards were added, and sculptor Sorel Etrog created the "Etrog".
A Place to Stand, Film of the Year.
The Ernie Game, Feature Film

1969 – The Best Damn Fiddler from Calabogie to Kaladar, Film of the Year

1970 – Psychocratie, Film of the Year.
Goin' Down the Road, Feature Film

1971 – Mon Oncle Antoine, Feature Film

1972 – Wedding in White, Feature Film

1973 – Slipstream, Feature Film

1974 – Awards ceremonies reorganized — 1974 awards presented at 1975 ceremonies.
The Apprenticeship of Duddy Kravitz, Film of the Year

1975 – Les Ordres, Film of the Year and Feature Film

1976 – Lies My Father Told Me, Feature Film

1977 – J.A. Martin photographe, Feature Film

1978 – The Silent Partner, Feature Film

ACADEMY OF CANADIAN CINEMA AWARDS (GENIES), 1980-1990

The Academy of Canadian Cinema was established in 1979, but no awards were given that year. The Academy took over the Canadian Film Awards, dropping the Film of the Year category. Best Canadian feature film awards were:

1980 – The Changeling

1981 – Les Bons Débarras

1982 – Ticket to Heaven

1983 – The Grey Fox

1984 – The Terry Fox Story

1985 – The Bay Boy

1986 – My American Cousin

1987 – The Decline of the American Empire

1988 – Un Zoo La Nuit

1989 – Dead Ringers

1989 – Special award to the NFB for 50 years of filmmaking

1990 – Jésus de Montréal

Max Films Distribution

Still from *Jésus de Montréal*, 1990 Genie Award winner.

Government programs have led to dramatic production increases in recent years. From a 1983 low of $60 million, production soared in 1988 to more than $500 million. In the same period, private investment rose from $30 million to $125 million.

Telefilm Canada Telefilm Canada, previously called the Canadian Film Development Corporation, was created in 1963 to strengthen the competitive position of Canadian films,

RECENTLY HONOURED CANADIANS

Throughout its 125 years, Canada's cultural community has grown and achieved an international profile through the accomplishment of its writers, actors and musicians. These recently honoured Canadian artists are representative of the calibre of the lively arts in Canada.

MUSIC:

Michel Pilon

André-Philippe Gagnon

Stuart Watson

k.d. lang

CBS Records Inc.

Leonard Cohen

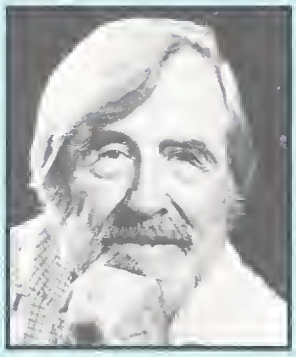
Feeling Productions Inc.

Céline Dion

LITERATURE:

McClelland & Stewart Inc.

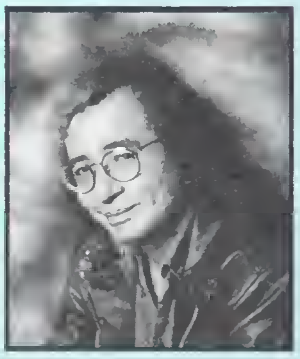
Margaret Atwood


André Lécoz

Gratien Gélinas

Editions du Seuil

Anne Hébert

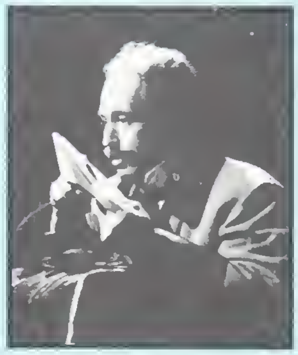

Native Earth Performing Arts Inc.

Tomson Highway

ACTING:

Noble Talent Management Inc.

Gordon Pinsent


Théâtre de la veillée

Gabriel Arcand

Courtesy Oscars & Abrams

Helen Shaver

Cinémathèque Québécoise

Louise Marleau

DANCE:

Norwood Photograph

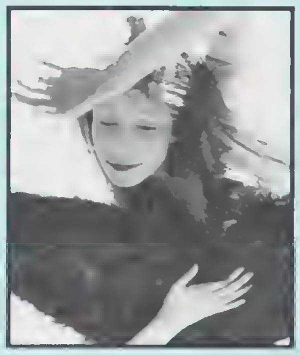
Frank Augustyn

Cylla von Tiedemann/National Arts Centre

Paul-André Fortier

Andrew Oxenham/National Ballet of Canada

Karen Kain


Musique Performance Inc

Marie Chouinard

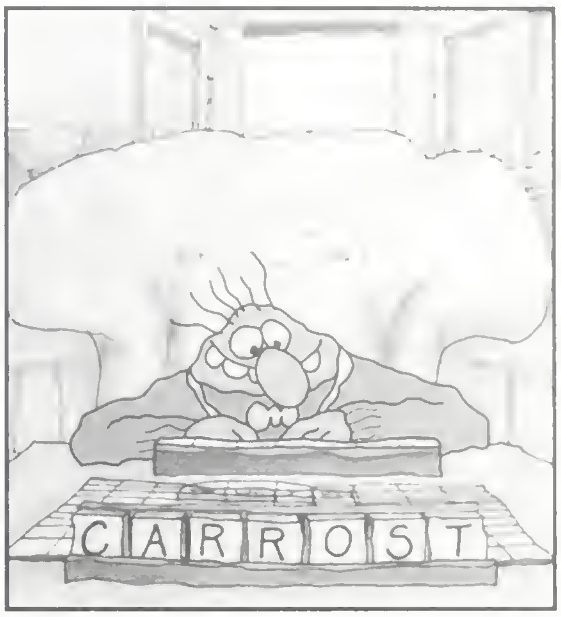
television programs and videos. In 1989-90, Telefilm Canada invested $166.5 million in Canadian film and television production.

In the agency's early years, Canada's thriving film industry got little support from the private sector. For example, of the $159.5 million generated by the film industry in 1967, only $22 million was spent in the private sector on film production.

Telefilm's early projects were low-budget films that failed to attract much attention. In the late 1970s, its emphasis shifted to high-budget and high-profile commercial projects.

Telefilm Canada is now involved in more than 300 projects annually. Financial assistance is available for every stage of film production, from screenplay development to final production, distribution and marketing. These assistance programs include the Canadian Broadcast Development Fund, the Feature Film Fund, the Interim Financing Fund, and the Canadian Production Marketing Assistance Fund.

Telefilm Canada co-ordinates Canadian participation in international festivals and makes grants to Canadian festivals. It manages film and television co-production agreements with Australia, Belgium, China, France, Israel, the Soviet Union and the United Kingdom.



National Film Board of Canada

Still from "The Big Snit", a National Film Board production.

NATIONAL FILM BOARD

The National Film Board's 9,000 original productions have been translated into 60 languages and distributed in 80 countries. Its work includes world-class productions in experimental, documentary, animation, and feature filmmaking. NFB productions have received some 3,000 awards, including nine Oscars. In 1989-90, the NFB's worldwide audience was more than 439 million.

The NFB is funded by the federal government and had an estimated budget of $78 million in 1991-92. It operates programs in both official languages and manages audiovisual centres, some of which include production studios, in every province. NFB headquarters are in Montreal. The Board also has offices in London, England, Paris and New York City.

The NFB works with both staff and freelance filmmakers and also participates in co-productions with the private sector. Technical support is available to developing filmmakers. The Board works with a number of organizations pursuing similar interests, including national and international broadcasters and Canadian educational television groups.

The NFB has often been a leader in the film industry. For example, in 1974, the Board's English Program established Studio D, the first all-women's filmmaking unit.

Film research and development are also part of the NFB's mandate. The Board played a major role in the development of the Canadian-designed Imax system, the big-screen projection technology featured at Vancouver's Expo 86, at the Canadian Museum of Civilization and at more than 50 theatres worldwide.

The NFB manages a national bilingual database on Canadian films and video. FORMAT includes information on more than 23,000 productions, including every NFB film ever produced.

Jack Long/National Film Board/National Archives of Canada/PA 169510

Producing animation at the National Film Board, 1944.

21.6 TELEVISION

In 1988-89, the conventional television market was worth $192 million, an increase of just over $100 million from 1982-83.

The average Canadian spends more time watching television than at any other leisure activity. In 1989, Canadians spent an average of 23.4 hours per week watching television. This level had changed very little since 1984.

Adult women watched four hours more television per week than adult men. Nationally, teenagers and young children (aged 2-11) watched less than did any other age group. Residents of Quebec and Newfoundland watched the most television, while British Columbians watched the least.

Canadians tuned to foreign (primarily American) stations for almost one-quarter of their total television viewing time, and two-thirds of their viewing time was spent watching foreign-produced shows. More than half (54%) of the programs watched on Canadian stations were foreign.

HOCKEY NIGHT IN CANADA

"He shoots! He scores!" Those were the immortal words of Foster Hewitt, the man who broadcast one of the first hockey games on radio, and whose voice became familiar to millions of Canadians.

***Hockey Night in Canada* was one of the most popular shows on radio, and Hewitt was hockey's voice for English Canada. His first broadcast was of a senior league match in Toronto in 1923 when he sat near the penalty box and telephoned his broadcast to the station. With its three overtime periods, the game was a huge success and Hewitt became a household name synonymous with hockey.**

In 1931, Hewitt broadcast the opening game in the Maple Leaf Gardens and by 1952 both Hewitt and *Hockey Night in Canada* had made their way to television. Hewitt retired from full-time broadcasting in 1963, but *Hockey Night in Canada* has become the longest-running program in Canadian television history, hitting its 39th season in 1991.

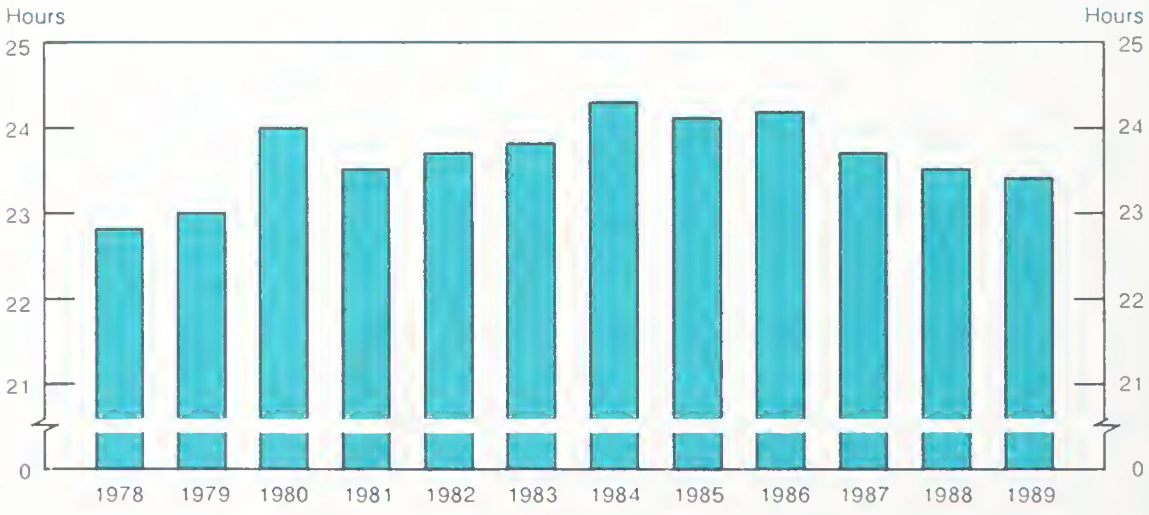
Brian McFarlane/National Film Board/National Archives of Canada/C 29521

Foster Hewitt at the mike at the Maple Leaf Gardens, 1935.

More francophones than anglophones watched Canadian programs. Close to two-thirds of all francophone viewing consisted of Canadian-made programs, compared to one-quarter for anglophones. Viewing of Canadian programs was concentrated in news and public affairs, which attracted almost 50% of all viewing. Sports, variety and game shows were also popular.

Chart 21.4

AVERAGE HOURS PER WEEK OF TELEVISION VIEWING



Home video is a lucrative market for distributors, representing 14% of their total revenue in 1988-89. In 1988-89, Canadian films and videos accounted for 8% of these revenues, compared to 5% in 1980-81.

Cable television is another increasingly prominent feature of Canadian home entertainment. In 1989, 71% of Canadians subscribed to cable television. Foreign programming accounted for 76% of the shows available through cable.

HISTORY

Since its appearance in the 1950s, television has continually evolved to adapt to new markets and to changes in viewer preferences. By responding to these forces, Canada's broadcasters have built an international reputation, particularly for news and public affairs programming.

In 1952, the Canadian Broadcasting Corporation (CBC) had a monopoly on network television broadcasting. In the network's early days, its French- and English-language broadcasts were restricted to evenings. Regular newscasts began in 1954, and by 1962 CBC programming was reaching 85% of Canadian homes.

CBC popularity grew quickly in Quebec. However, large cities such as Toronto and Vancouver began picking up American stations in the mid-1950s, and the CBC English-language network quickly lost a large segment of its audience.

In 1959, the Board of Broadcast Governors introduced Canadian content regulations to promote domestic programming, signalling a new era. Through the 1960s and 1970s, new stations popped up across the country, private networks developed, and cable television became increasingly popular.

Cable television first surfaced in the 1950s as a means of improving reception for smaller television stations. In the mid-1960s, cable was a relatively insignificant part of the television industry, reaching only 4% of Canadian households. Between 1965 and 1975, however, the cable audience grew to 60% of viewers in major cities.

In the mid-1970s, the CBC tried to increase Canadian content in prime time. Generally the private networks did not follow suit, because it was cheaper to import popular American shows. The CBC's audience fell from half the national audience in 1967 to around a quarter in the 1980s.

Federal funding through Telefilm Canada and other assistance programs has encouraged domestic television productions, but Canadian programs continue to face stiff competition from foreign networks.

21.7 MUSEUMS AND LIBRARIES

Canada's national museums offer visitors a comprehensive survey of the country's social, economic and political history. They are invaluable as educational resources for everything from school tours to research training of university students. Canada's national museums are also well-known for their distinguished research and publications.

Canadian Museum of Civilization The new Canadian Museum of Civilization opened in Hull, Quebec, in June 1989.

Situated on the ceremonial route linking the banks of the Ottawa River, the curving limestone and glass masses of the Museum's two main buildings — the copper-domed Glacier Wing and the terraced Canadian Shield Wing — suggest the elemental contours of Canada's natural landscape. Designed by renowned architect Douglas Cardinal, the Museum buildings illustrate the successful melding of Canada's rich natural and cultural heritage.

The Museum's informative, entertaining displays chart 10,000 years of human history in this continent and include life-size reconstructions of historic sites. The Grand Hall, for example, recreates a complete West Coast Indian village with traditional totem poles and loghouses. The Museum also has the world's first combined Imax and Omnimax cinema.

Along with collecting, displaying and preserving objects of Canada's cultural heritage, the Museum also conducts research in Canadian studies. Its staff includes archaeologists, ethnologists, anthropologists, historians, folklorists, musicologists and curators.

Canadian War Museum Associated with the Canadian Museum of Civilization, the Canadian War Museum highlights Canada's military heritage. Artifacts from four centuries of armed conflict, ranging from tanks to cap badges, are displayed on three floors of galleries.

The Museum also has one of the finest collections of war art in the world. Annual special exhibits focus on chapters of Canada's military past, such as the role of women in war to the wartime work of artists such as Alex Colville. International audiences are reached through travelling exhibitions, a historical publications series and educational programs.

Canadian Museum of Nature Formerly known as the National Museum of Natural Sciences, the Museum of Nature houses six permanent exhibits: the Earth, Life through the Ages, Birds of Canada, Mammals in Canada, Animals in Nature and Plant Life. Each exhibit has a separate hall and uses computers, videos, photographs, touch displays, workshops, concerts and real specimens to educate visitors.

The Museum's collections, among the best in the world, are maintained by five scientific divisions. Staff and associated scientists from other organizations keep the Museum active in fieldwork and laboratory research. The results of the Museum's research over the years have been printed in hundreds of scientific publications.

National Museum of Science and Technology More than 10 million people have visited the Museum of Science and Technology in Ottawa since its opening in 1967. Featuring scientific discoveries and technological advances in a hands-on format, the museum's exhibits let visitors directly participate in the experience of science.

The various halls within the Museum are dedicated to ground transportation, communications and space, astronomy, time pieces, computer technology, agriculture and graphic arts. The Museum offers daily demonstrations, guided interpretive programs and an evening astronomy program in which visitors view the stars through Canada's largest refracting telescope.

The Museum issues several publications and has a specialized library of about 20,000 books, journals and reference works.

The **Agricultural Museum** is essentially an extension of the agricultural technology division of the Museum of Science and Technology. Created in co-operation with Agriculture Canada in 1983, the Museum is located at the Central Experimental Farm in Ottawa.

National Aviation Museum Another relative newcomer on the Canadian cultural scene is the National Aviation Museum.

The Museum includes 118 aircraft and artifacts such as engines, propellers, instruments, wind tunnel models, and flying armament and clothing. The scope of the Museum's collection and the quality of its restoration work make it one of the most important institutions of its kind in the world.

In 1964, the three major collections of Canadian government aircraft were amalgamated into one public display, the National Aeronautical Collection. Combining the holdings of the Canadian War Museum, the Royal Canadian Air Force and the National Aviation Museum, the new collection is on display at Ottawa's Rockcliffe Airport.

National Archives of Canada Established in 1872, the Archives provides research services and acquires documents relating to Canada's development.

The archives' holdings are extremely diverse. They include papers from individuals and organizations; copies of documents relating to Canada held in other countries; records of federal departments and agencies; visual materials such as photographs, documentary artwork and heraldic insignia; films, television programs and sound recordings; and maps and plans pertaining to the discovery, exploration and settlement of Canada.

The Archive's library comprises more than 80,000 volumes on Canadian history, including pamphlets, periodicals and government publications. These documents are not loaned out, but they can be used in the Archives building 24 hours a day by accredited researchers. Headquartered in Ottawa, the Archives has records centres in six major Canadian cities. Branch offices are located in London, England and in Paris, France.

National Library of Canada In 1967 — Canada's centennial year — the National Library moved into the Ottawa building it presently shares with the National Archives.

Founded in 1953, the Library makes Canada's published heritage available to the general public. It facilitates information sharing and fosters library development across the country.

The National Library's collection has some 8 million items, including books, journals, microfilm, microfiche, sound recordings, sheet music, literary manuscripts, rare books, newspapers, educational kits, videos and machine-readable records. Although the primary focus of the collection is Canadian, some non-Canadian works in the social sciences and humanities are also kept for research and general information purposes.

The Library recognizes the need for co-operation among all Canadian libraries and maintains a catalogue of the holdings of major libraries across the country. It also offers information services to libraries and to individuals requiring resources not available in their communities.

In addition to general reference services, the Library offers services and maintains collections on a variety of topics, including Canadian studies, children's literature and music. It also publishes several bibliographies, guides and directories.

The National Library is also involved in preservation, an important issue for libraries. Preservation measures include de-acidifying books, microfilming rare publications and promoting the use of long-lasting paper by Canadian publishers.

Sources

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Canadian Conference of the Arts.
Canadian Museum of Civilization.
Canadian Museum of Nature.
Department of Communications.
Department of Consumer and Corporate Affairs.
National Archives of Canada.
National Arts Centre.
National Aviation Museum.
National Film Board.
National Library of Canada.
National Museum of Science and Technology.
National Museums.
Telefilm Canada.
Various Provincial Boards and Departments.

FOR FURTHER READING

Selected publications from Statistics Canada

- *Culture Statistics: Sound Recording, Preliminary Statistics*, annual. 87-202
- *Culture Statistics: Periodical Publishing, Preliminary Statistics*, annual. 87-203
- *Culture Statistics: Film Industry, Preliminary Statistics*, annual. 87-204
- *Culture Statistics: Government Expenditures on Culture in Canada, Preliminary Statistics*, annual. 87-206
- *Culture Statistics: Heritage Institutions, Museums, Parks, Historic Sites, Archives, other Related Institutions*, annual. 87-207
- *Culture Statistics: Television Viewing in Canada*, annual. 87-208
- *Culture Statistics: Book Publishing in Canada*, annual. 87-210
- *Culture Statistics: Performing Musicians and Composers*, 1982. 1986. 87-530
- *Culture Statistics: The Economic Impact of the Arts and Culture Sector*, 1986. 87-532
- *Arts and Culture: A Statistical Profile*, 1985. 87-527
- *Motion Picture Production*, annual. 63-206

TABLES

LEGEND

. .	*not available*	e	*estimate*
. . .	*not appropriate or not applicable*	p	*preliminary*
—	*nil or zero*	r	*revised*
--	*too small to be expressed*		

(Certain tables may not add due to rounding.)

21.1 FEDERAL GOVERNMENT TOTAL EXPENDITURES ON CULTURE, BY FUNCTION, FISCAL YEARS ENDING 1987-88 AND 1988-89 (THOUSAND DOLLARS)

Function	Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.
Libraries									
National	1987-88	—	—	—	—	23,412	12,812	—	—
	1988-89	—	—	—	—	24,298	11,568	—	—
Public	1987-88	—	—	—	—	—	—	—	—
	1988-89	—	—	—	—	—	—	—	—
School	1987-88	—	—	—	—	—	—	—	—
	1988-89	—	—	—	—	—	—	—	—
University and college	1987-88	—	—	—	—	—	—	—	—
	1988-89	—	—	—	—	—	—	—	—
Total libraries	1987-88	—	—	—	—	23,412	12,812	—	—
	1988-89	—	—	—	—	24,298	11,568	—	—
Heritage resources									
Museums	1987-88	219	240	680	492	81,136	120,841	756	563
	1988-89	418	232	2,160	581	94,379	117,131	1,143	1,687
Public archives	1987-88	—	—	266	—	511	46,038	339	150
	1988-89	—	—	355	—	5,059	46,488	655	320
Historic parks and sites	1987-88	2,066	512	10,911	898	15,477	11,495	3,515	2,619
	1988-89	2,399	658	12,529	973	16,659	9,925	4,979	2,663
Nature/provincial parks	1987-88	9,916	3,152	7,609	7,552	16,018	12,266	5,892	8,360
	1988-89	13,833	3,178	8,651	7,095	17,203	11,616	7,335	5,543
Other heritage	1987-88	—	656	10,059	—	44,934	33,840	10,475	—
	1988-89	—	761	10,471	40	49,089	38,018	10,301	—
Total heritage resources	1987-88	12,201	4,560	29,525	8,942	158,076	224,480	20,977	11,692
	1988-89	16,650	4,829	34,166	8,689	182,389	223,178	24,413	10,213
Arts education	1987-88	—	12	—	—	—	42	—	—
	1988-89	8	—	1	106	—	107	21	—
Literary arts	1987-88	740	131	832	398	10,600	10,155	2,598	1,104
	1988-89	615	337	918	436	11,673	10,814	685	849
Performing arts	1987-88	386	218	1,207	1,170	13,490	56,170	3,020	708
	1988-89	430	266	1,324	938	17,490	63,313	4,636	952
Visual arts and crafts	1987-88	143	51	1,649	100	2,923	4,402	742	415
	1988-89	157	63	289	151	3,021	4,459	537	518
Film and video	1987-88	1,155	72	3,963	780	121,421	60,274	3,379	414
	1988-89	227	58	7,643	754	136,913	61,849	4,693	226
Broadcasting[1]	1987-88	27,697	4,448	28,230	26,464	420,043	552,554	34,938	25,843
	1988-89	28,807	5,109	33,326	29,708	441,195	567,478	37,710	29,634
Sound recording	1987-88	—	—	—	—	90	203	—	9
	1988-89	18	3	3	24	2,213	2,764	44	24
Multiculturalism	1987-88	195	—	405	297	2,243	5,136	1,257	608
	1988-89	208	172	454	218	2,640	6,401	1,120	661
Multidisciplinary activities	1987-88	1,715	561	1,900	3,977	24,014	32,890	7,362	4,020
	1988-89	1,202	534	1,524	2,295	15,166	21,753	2,003	3,687
Other	1987-88	—	—	—	—	169	9,287	—	—
	1988-89	—	—	—	—	114	9,311	—	—
Total expenditures	1987-88	44,232	10,053	67,711	42,128	776,481	968,405	74,273	44,813
	1988-89	48,322	11,371	79,648	43,319	837,112	982,995	75,862	46,764

21.1 FEDERAL GOVERNMENT TOTAL EXPENDITURES ON CULTURE, BY FUNCTION, FISCAL YEARS ENDING 1987-88 AND 1988-89 (THOUSAND DOLLARS) (concluded)

Function	Year	Alta.	BC	Yukon	NWT	National organi-zations	Foreign	Unallocated expenditures	Total expenditures
Libraries									
National	1987-88	—	—	—	—	70	62	—	36 356
	1988-89	—	—	—	—	—	78	—	35,944
Public	1987-88	6	—	—	—	—	—	—	6
	1988-89	—	—	—	—	—	—	—	2
School	1987-88	—	—	—	—	—	—	—	—
	1988-89	—	—	—	—	—	—	—	—
University and college	1987-88	—	3	—	—	—	—	—	3
	1988-89	—	—	—	—	—	—	—	1
Total libraries	1987-88	6	3	—	—	70	62	—	36,365
	1988-89	—	—	—	—	—	78	—	35,944
Heritage resources									
Museums	1987-88	1,586	1,770	10	124	404	—	—	208,821
	1988-89	2,156	8,417	105	111	628	1,714	—	230,862
Public archives	1987-88	191	359	—	—	4	—	—	47,858
	1988-89	304	475	—	—	—	598	—	54,254
Historic parks and sites	1987-88	483	3,262	3,808	—	2	—	—	55,048
	1988-89	332	3,560	3,766	—	—	—	—	58,443
Nature/provincial parks	1987-88	46,009	38,195	5,358	7,140	—	—	—	167,467
	1988-89	50,039	45,406	4,936	8,307	—	—	—	183,142
Other heritage	1987-88	13,689	34	—	—	—	—	—	113,687
	1988-89	13,996	17	—	—	—	—	—	122,693
Total heritage resources	1987-88	61,958	43,620	9,176	7,264	410	—	—	592,881
	1988-89	66,827	57,875	8,807	8,418	628	2,312	—	649,394
Arts education	1987-88	—	—	—	—	3,510	—	—	3,564
	1988-89	14	10	—	—	4,256	—	—	4,523
Literary arts	1987-88	1,597	3,024	235	560	253,479[2]	—	540	285,993
	1988-89	1,718	2,403	195	413	251,964[2]	—	390	283,410
Performing arts	1987-88	3,276	5,713	23	9	4,891	173	2,603	93,057
	1988-89	3,871	7,391	37	11	3,395	127	2,370	106,551
Visual arts and crafts	1987-88	663	2,082	2	178	788	—	331	14,469
	1988-89	644	1,418	1	355	945	—	520	13,078
Film and video	1987-88	2,628	5,587	—	292	675	2,220	756	203,616
	1988-89	2,227	17,949	—	—	637	2,571	130	235,877
Broadcasting[1]	1987-88	41,139	52,824	1,612	18,361[3]	98	721	—	1,234,972
	1988-89	50,948	61,192	4,332	20,145	1,289	8,211	—	1,319,084
Sound recording	1987-88	12	9	—	—	4,130	—	—	4,453
	1988-89	120	474	—	—	236	—	—	5,923
Multiculturalism	1987-88	1,384	1,684	—	—	6,414	—	6,046	25,669
	1988-89	1,963	1,962	—	17	6,287	3	9,387	31,493
Multidisciplinary activities	1987-88	8,652[4]	11,331[5]	194	994	2,760	—	3,650	104,020
	1988-89	5,403[4]	10,400[5]	165	1,146	3,027	—	1,271	69,576
Other	1987-88	—	—	—	—	1,585	—	—	11,041
	1988-89	—	—	—	—	1,060	—	2,377	12,862
Total expenditures	1987-88	121,315	125,877	11,242	27,658	278,810	3,176	13,926	2,610,100[6]
	1988-89	133,735	161,074	13,537	30,505	273,724	13,302	16,445	2,767,715[6]

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[1] *The Canadian Broadcasting Corporation (CBC) distributes its program costs according to the province where the production activities occur. Station transmission costs are related to the geographic location of the transmitter. The CBC's network distribution costs follow the principle used for station transmission costs, except for terrestrial lines and satellite channels which are paid by Ottawa but transferred to Toronto and Montreal Network Centres. Payments to private station affiliates are charged to the responsible Network Centres and relate also to the province where these centres are located. The Corporation's administration costs are distributed according to the province where the administration function is located geographically. The CBC distributes its capital expenditures according to the provincial location of capital assets.*

[2] *Includes payments to the Canada Post Corporation for costs associated with publication mailings.*

[3] *Includes the data for the Yukon.*

[4] *Includes some grants and contributions given to individuals and/or organizations in the Northwest Territories.*

[5] *Includes some grants and contributions given to individuals and/or organizations in Yukon.*

[6] *Includes only extramural (grants and contributions) expenditures by the Canada Employment and Immigration Commission directly related to training and employment development in the culture sector.*

21.2 PROVINCIAL GOVERNMENT TOTAL EXPENDITURES ON CULTURE, BY FUNCTION, FISCAL YEARS ENDING 1987-88 AND 1988-89 (THOUSAND DOLLARS)

Function	Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Libraries								
National	1987-88	—	—	—	—	5,367	—	—
	1988-89	—	—	—	—	5,697	—	—
Public	1987-88	5,224	1,576	6,958	6,316	16,795	42,972	3,665
	1988-89	5,707	1,639	8,644	6,776	22,540	41,629	4,097
School	1987-88^{e}	1,090	859	4,920	4,427	25,776	33,996	1,306
	1988-89^{e}	1,064	893	5,179	4,538	24,087	37,512	1,540
University and college	1987-88^{e}	5,990	1,307	7,408	6,293	83,929	108,174	13,008
	1988-89^{e}	6,720	1,359	8,138	6,895	91,761	116,676	14,609
Total libraries	1987-88	12,304	3,742	19,286	17,036	131,867	185,142	17,979
	1988-89	13,491	3,891	21,961	18,209	144,085	195,817	20,246
Heritage resources								
Museums	1987-88	1,376	814	10,305	1,443	38,976	65,682	6,779
	1988-89	1,319	846	15,908	1,411	41,372	84,069	6,152
Public archives	1987-88	389	161	1,714	1,048	5,591	3,135	1,617
	1988-89	375	167	1,343	1,214	6,172	3,158	1,666
Historic parks and sites	1987-88	529	97	556	3,632	17,210	36,308	452
	1988-89	741	100	272	3,225	20,070	35,850	406
Nature/provincial parks	1987-88	238	2,426	1,792	—	8,390^{e}	8,235	11,486
	1988-89	339	2,523	2,758	—	8,335^{e}	9,744	11,252^{e}
Other heritage	1987-88	—	283	529	246	330	9,861	2,550
	1988-89	1,276	295	1,766	234	362	7,619	2,548
Total heritage resources	1987-88	2,532	3,781	14,896	6,369	70,497	123,221	22,884
	1988-89	4,050	3,931	22,047	6,084	76,311	140,440	22,024
Arts education	1987-88	2	151	6,757	—	13,314	11,382	555
	1988-89	2	158	6,195	—	14,824	12,658	477
Literary arts	1987-88	156	114	220	91	7,383	5,015	767
	1988-89	253	119	312	78	7,222	5,145	1,946
Performing arts	1987-88	4,769	1,584	2,342	1,217	45,380	25,876	5,386
	1988-89	4,582	1,647	2,644	617	48,885	24,188	5,360
Visual arts and crafts	1987-88	611	20	537	588	7,707	7,820	3,469
	1988-89	619	21	1,155	251	9,076	7,536	3,103
Film and video	1987-88	3	279	88	—	17,049	9,082	344
	1988-89	9	290	170	92	14,983	10,510	363
Broadcasting	1987-88	—	—	71	—	73,786	60,969	304
	1988-89	—	—	87	—	86,304	74,476	400
Sound recording	1987-88	—	8	3	—	2,075	76	90
	1988-89	—	8	—	—	1,475	112	40
Multiculturalism	1987-88	—	11	285	186	2,588	25,106	2,785
	1988-89	—	12	775	—	3,547	14,862	2,191
Multidisciplinary activities	1987-88	102	20	720	27	9,365	24,436	7,207
	1988-89	122	21	261	29	16,978	34,438	6,709
Other	1987-88	—	63	733	2,654	46,552	1,141	—
	1988-89	—	66	1,034	2,167	46,323	1,778	11
Total expenditures	1987-88	20,479	9,773	45,938	28,168	427,563	479,266	61,770
	1988-89	23,128	10,164	56,641	27,527	470,013	521,960	62,870

21.2 PROVINCIAL GOVERNMENT TOTAL EXPENDITURES ON CULTURE, BY FUNCTION, FISCAL YEARS ENDING 1987-88 AND 1988-89 (THOUSAND DOLLARS) (concluded)

Function	Year	Sask.	Alta.	BC	Yukon	NWT	Total
Libraries							
National	1987-88	—	—	—	—	—	5,367
	1988-89	—	—	—	—	—	5,697
Public	1987-88	7,061	13,046	8,097	693	967	113,370
	1988-89	7,265	12,561	8,680	892	1,387	121,817
School	1987-88[e]	5,734	9,240	38,989	265	918	127,520
	1988-89[e]	5,973	9,509	42,119	288	935	133,637
University and college	1987-88[e]	9,849	27,305	40,672	148	165	304,248
	1988-89[e]	10,906	28,710	42,438	154	172	328,538
Total libraries	1987-88	22,644	49,591	87,758	1,106	2,050	550,505
	1988-89	24,144	50,780	93,237	1,334	2,494	589,689
Heritage resources							
Museums	1987-88	3,302	14,428	17,765	950	1,046	162,866
	1988-89	3,551	16,503	16,577	903	1,248	189,859
Public archives	1987-88	1,519	1,161	2,408	415	251	19,409
	1988-89	1,838	1,141	2,083	1,966	278	21,401
Historic parks and sites	1987-88	696	8,119	5,993	702	292	74,586
	1988-89	772	6,865	4,334	1,960	286	74,881
Nature/provincial parks	1987-88	14,100	—	8,002	470	—	55,139
	1988-89	15,627	—	11,250	339	—	62,167
Other heritage	1987-88	1,814	2,670	4,590	372	322	23,567
	1988-89	1,770	4,041	2,692	—	299	22,902
Total heritage resources	1987-88	21,431	26,378	38,758	2,909	1,911	335,567
	1988-89	23,558	28,550	36,936	5,168	2,111	371,210
Arts education	1987-88	586	20,789	7,919	7	—	61,462
	1988-89	642	20,806	9,149	50	—	64,961
Literary arts	1987-88	534	2,199	513	2	—	16,994
	1988-89	607	2,542	492	—	—	18,716
Performing arts	1987-88	1,050	15,588	8,772	140	—	112,104
	1988-89	2,449	12,799	6,431	10	—	109,612
Visual arts and crafts	1987-88	940	2,818	1,471	92	1,032	27,105
	1988-89	1,231	3,436	1,402	74	819	28,723
Film and video	1987-88	48	940	2,652	—	—	30,485
	1988-89	51	868	4,685	—	—	32,021
Broadcasting	1987-88	—	16,481	6,405	—	441	158,457
	1988-89	—	18,175	6,324	—	724	186,490
Sound recording	1987-88	—	—	—	—	—	2,252
	1988-89	—	—	—	—	—	1,635
Multiculturalism	1987-88	6	3,494	489	80	—	35,030
	1988-89	674	3,330	638	—	—	26,029
Multidisciplinary activities	1987-88	46	16,976	965	109	756	60,729
	1988-89	7,462	14,298	1,117	300	639	82,374
Other	1987-88	236	152	496	3	—	52,030
	1988-89	357	177	396	—	—	52,309
Total expenditures	1987-88	47,521	155,406	156,198	4,448	6,190	1,442,720
	1988-89	61,175	155,761	160,807	6,936	6,787	1,563,769

21.3 MUNICIPAL GOVERNMENT EXPENDITURES ON CULTURE, BY FUNCTION, 1987 AND 1988 (THOUSAND DOLLARS)

Function	Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Current expenditures								
Libraries[1]	1987	7,724	927	16,062	13,080	104,528	272,755	25,194
	1988	7,732	964	17,679	13,849	115,862	298,162	26,670
Museums	1987	—	21	12	347	—	3,171	303
	1988	—	16	6	338	—	831	406
Public archives	1987	—	—	—	—	—	239	—
	1988	—	—	—	—	—	271	—
Historic sites	1987	40	—	9	17	—	5,256	45
	1988	40	—	4	650	—	4,311	48
Performing arts	1987	16	178	535	—	—	3,075	313
	1988	15	136	10	—	—	2,752	261
Other	1987	68	—	76	747	51,460	66,665	5,868
	1988	11	—	57	812	34,061	74,993	6,065
Total	1987	7,848	1,126	16,694	14,191	155,988	351,161	31,723
	1988	7,798	1,116	17,756	15,649	149,923	381,320	33,450
Capital expenditures								
Libraries	1987	227	—	1,088	100	7,492	10,194	1,039
	1988	300	—	1,287	170	63,295	20,229	573
Museums	1987	—	—	35	—	2,238	4,196	35
	1988	—	—	1,129	156	976	3,480	—
Public archives	1987	—	—	—	—	—	320	—
	1988	—	—	—	—	—	636	—
Historic sites	1987	—	—	—	—	—	682	—
	1988	—	—	—	2	392	743	—
Performing arts	1987	—	—	—	—	—	2,471	130
	1988	—	—	—	—	368	2,238	43
Other	1987	—	—	86	—	—	18,255	322
	1988	—	—	90	—	7,726	11,690	1,009
Total	1987	227	—	1,209	100	9,730	36,118	1,526
	1988	300	—	2,506	328	72,757	39,016	1,625
Total expenditures								
Libraries[1]	1987	7,951	927	17,150	13,180	112,020	282,949	26,233
	1988	8,032	964	18,966	10,683	105,290	262,088	22,454
Museums	1987	—	21	47	347	2,238	7,367	338
	1988	—	21	38	313	833	10,015	254
Public archives	1987	—	—	—	—	—	559	—
	1988	—	—	—	—	—	312	—
Historic sites	1987	40	—	9	17	—	5,938	45
	1988	2	—	3	26	—	6,347	45
Performing arts	1987	16	178	535	—	—	5,546	443
	1988	—	169	44	—	—	3,775	1,865
Other	1987	68	—	162	747	51,460	84,920	6,190
	1988	52	26	506	680	48,342	70,668	5,826
Total	1987	8,075	1,126	17,903	14,291	165,718	387,279	33,249
	1988	8,098	1,116	20,262	15,977	222,680	420,336	35,075

21.3 MUNICIPAL GOVERNMENT EXPENDITURES ON CULTURE, BY FUNCTION, 1987 AND 1988 (THOUSAND DOLLARS) (concluded)

Function	Year	Sask.	Alta.	BC	Yukon	NWT	Total
Current expenditures							
Libraries[1]	1987	42,663	62,883	104,711	351	1,269	652,147
	1988	33,488	55,495	116,794	365	1,405	688 465
Museums	1987	1,579	1,149	5,177	—	14	11,773
	1988	1,735	2,120	5,191	7	—	10,650
Public archives	1987	—	61	675	—	—	975
	1988	—	102	620	—	—	993
Historic sites	1987	41	—	14	—	—	5,422
	1988	118	—	211	—	—	5,382
Performing arts	1987	868	2,994	6,340	—	—	14,319
	1988	1,067	5,366	6,198	—	—	15,805
Other	1987	2,819	3,364	7,355	23	13	138,458
	1988	1,448	8,457	7,800	21	52	133,777
Total	1987	47,970	70,451	124,272	374	1,296	823,094
	1988	37,856	71,540	136,814	393	1,457	855,072
Capital expenditures							
Libraries	1987	3,575	6,118	1,679	—	—	31,512
	1988	5,024	1,003	3,497	—	11	95,389
Museums	1987	112	1,146	1,079	—	—	8,841
	1988	59	1,196	1,375	—	—	8,371
Public archives	1987	—	—	7	—	—	327
	1988	—	2	—	—	—	638
Historic sites	1987	329	284	—	—	—	1,295
	1988	—	—	—	—	—	1,137
Performing arts	1987	—	—	6,005	—	—	8,606
	1988	282	777	2,270	—	—	5,978
Other	1987	539	3,143	2,210	—	—	24,555
	1988	2,972	2,508	1,688	—	—	27,683
Total	1987	4,555	10,691	10,980	—	—	75,136
	1988	8,337	5,486	8,830	—	11	139,196
Total expenditures							
Libraries[1]	1987	46,238	69,001	106,390	351	1,269	683,659
	1988	38,512	56,498	120,291	365	1,416	783,854
Museums	1987	1,691	2,295	6,256	—	14	20,614
	1988	1,794	3,316	6,566	7	—	19,021
Public archives	1987	—	61	682	—	—	1,302
	1988	—	104	620	—	—	1,631
Historic sites	1987	370	284	14	—	—	6,717
	1988	118	211	—	—	—	6,519
Performing arts	1987	868	2,994	12,345	—	—	22,925
	1988	1,349	6,143	8,468	—	—	21,783
Other	1987	3,358	6,507	9,565	23	13	163,013
	1988	4,420	10,965	9,488	21	52	161,460
Total	1987	52,525	81,142	135,252	374	1,296	898,230
	1988	46,193	77,026	145,644	393	1,468	994,268

[1] *Also includes the estimated expenditures for school libraries.*

21.4 SUPPORT TO THE ARTS BY THE CANADA COUNCIL, 1979-80 TO 1988-89 (THOUSAND DOLLARS)

Discipline and program	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Dance	4,602	5,166	6,319	7,752	8,223	8,861	8,795	10,664	9,744	11,555
Music and opera	9,726	10,386	11,490	12,986	13,969	14,599	14,844	17,045	16,154	17,917
Theatre	9,535	10,107	11,551	13,444	14,178	15,013	14,964	18,079	16,547	18,836
Visual arts	4,441	4,627	5,783	6,495	7,218	8,044	7,580	8,380	9,382	9,716
Media arts[1]	1,887	1,949	2,493	3,018	3,189	3,690	3,642	4,512	4,003	4,929
Writing and publishing[2]	7,083	7,027	8,580	9,791	10,041	10,959	10,903	14,505	17,145	19,935
Other disciplines[3]	283	401	454	548	620	637	384	1,451	362	446
Art bank purchases	610	644	647	1,021	1,006	968	917	1,091	993	956
Explorations program	1,407	1,425	1,671	1,340	2,128	2,352	2,350	2,574	2,639	2,769
Touring office program	2,221	1,961	2,569	3,154	3,333	3,543	3,599	4,345	3,991	4,618
Total	41,795	43,693	51,557	59,549	63,905	68,666	67,978	82,646	80,960	91,677

[1] *Media arts include film and holography, video and audio, and integrated media (which started in fiscal year 1982-83).*

[2] *Public Lending Right Commission introduced in fiscal year 1986-87.*

[3] *Includes art administration (art administration has been suspended since fiscal year 1985-86), multidisciplinary work and performance art.*

21.5 SUMMARY STATISTICS ON THE PERFORMING ARTS, 1988

Item	Theatre	Music	Dance	Opera
Revenue by source (%)				
Ticket sales	41	28	22	34
Guarantees	6	9	11	2
Other	9	9	10	4
Unearned				
Public	33	35	41	34
Private	12	18	16	26
Expenditures by type (%)				
Personnel	53	65	44	56
Publicity and promotion	10	10	11	10
Administration	6	6	5	6
Other production costs[1]	19	12	28	18
Other expenses[2]	12	7	12	10

[1] *Includes royalties and fees paid for commissioned works and other production expenses such as sets, props, costumes and wardrobe.*

[2] *Refers to space costs for office, storage, utilities and maintenance, and other expenses such as ticket printing and bar licence.*

21.6 NUMBER OF PRODUCTIONS, BY TYPE AND PROVINCE OF THE PRODUCTION COMPANY, 1988-89

Region or province	Number of firms	Television commercials	Number of firms	Music videos	Number of firms	Filmstrips	Number of firms	Other productions, less than 30 minutes	Number of firms	Productions between 30 and 74 minutes	Number of firms	Theatrical features 75 minutes or longer	Number of firms	Other productions, 75 minutes or longer	Number of firms	Other[1]	Number of firms	Total
Atlantic region	18	202	2	2	1	1	30	204	4	5	1	1	1	4	5	50	36	469
Quebec	34	850	8	25	3	11	69	1,681	40	1,656	12	20	8	42	12	1,167	125	5,452
Ontario	52	1,569	12	33	7	70	129	3,755	50	1,172	11	18	12	307	23	1,192	199	8,116
Manitoba	4	59	1	1	—	—	13	123	1	10	1	2	—	—	4	410	15	605
Saskatchewan	6	565	—	—	1	1	14	179	2	9	1	1	—	—	2	51	16	806
Alberta	5	206	1	2	—	—	22	361	8	21	1	1	3	15	2	2	29	608
British Columbia, Yukon and Northwest Territories	25	915	7	17	—	—	50	636	18	992	3	3	6	66	9	77	73	2,706
Canada	144	4,366	31	80	12	83	327	6,939	123	3,865	30	46	30	434	57	2,949	493	18,762

[1] *"Other" includes inserts, trailers, unspecified.*

21.7 REVENUE FROM THE DISTRIBUTION OF FILM AND VIDEO PRODUCTIONS, BY MARKET, 1983-84 TO 1988-89

(THOUSAND DOLLARS)

Market	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Theatrical						
Canadian	5,709	1,401	3,979	6,038	7,401	7,816
Import	133,071	131,093	125,421	114,246	134,078	150,851
Total	138,780	132,494	129,400	120,284	141,479	158,667
Conventional television						
Canadian	5,317	6,382	8,423	11,562	14,913	14,863
Import	94,070	101,756	132,791	149,698	176,766	204,576
Total	99,387	108,138	141,214	161,260	191,679	219,439
Pay/cable television						
Canadian	6,782	1,670	4,708	2,272	3,250	5,908
Import	13,280	13,253	21,619	24,883	33,073	27,053
Total	20,062	14,923	26,327	27,155	36,323	32,961
Home video						
Canadian	589	890	5,130	3,563	4,590	3,454
Import	17,195	42,688	68,631	50,257	39,878	67,705
Total	17,784	43,578	73,761	53,820	44,468	71,159
Non-theatrical						
Canadian	3,494	3,190	5,667	4,855	6,085	10,396
Import	14,791	16,191	18,099	25,562	17,701	14,952
Total	18,285	19,381	23,766	30,417	23,786	25,348
Total						
Canadian	21,891	13,533	27,907	28,289	36,240	42,437
Import	272,408	304,981	366,561	364,646	401,496	465,137
Total	294,299	318,514	394,468	392,936	437,736	507,574

21.8 AVERAGE PRICES, ADMISSIONS AND REVENUES OF MOTION PICTURE THEATRES, SELECTED YEARS

Year	Number of theatres		Admission receipts ($'000)		Number of paid admissions ('000)		Average admission price[1] ($)
	Regular	Drive-ins	Regular	Drive-ins	Regular	Drive-ins	
1955	1,950	242	86,374	5,755	184,968	10,688	0.47
1960	1,427	232	65,505	6,790	107,705	10,029	0.61
1965	1,171	247	75,372	9,790	89,135	10,780	0.85
1970	1,156	279	111,692	17,047	80,826	11,489	1.38
1975	1,173	315	182,139	29,283	84,161	12,843	2.16
1980	1,019	283	271,128	40,291	88,980	11,991	3.05
1981	1,033	286	279,219	40,876	84,855	11,200	3.29
1982	983	270	316,741	37,547	87,602	9,663	3.62
1983	899	260	298,411	30,230	78,139	7,658	3.82
1984	856	245	302,124	26,216	73,394	6,156	4.12
1985	788	219	299,763	23,069	74,942	5,634	4.00
1986	714	183	286,416	17,706	71,764	4,067	3.99
1987	675	146	345,214	14,800	81,489	3,370	4.24
1988	658	132	360,383	14,874	75,711	3,103	4.76
1989	650	123	409,840	16,349	79,018	3,168	5.19

[1] *Admission receipts excluding amusement taxes divided by number of paid admissions (regular theatres only).*

21.9 AVERAGE HOURS PER WEEK OF TELEVISION VIEWING[1], BY AGE GROUP AND SEX, FALL 1989

Age and sex	Nfld.	PEI	NS	NB	Quebec		
					Language[2]		
					English	French	Total
Males							
18 and over	24.4	22.3	22.8	22.3	22.2	23.7	23.8
18 to 24	19.5	17.4	16.9	19.8	15.4	17.7	17.7
25 to 34	26.3	21.5	20.7	20.3	21.0	20.7	20.9
35 to 49	21.6	20.1	20.0	20.4	20.1	21.9	21.6
50 to 59	27.6	27.2	22.8	21.2	19.9	27.7	26.7
60 and over	30.4	27.4	34.2	29.9	31.3	35.2	34.5
Females							
18 and over	28.6	26.5	27.5	29.7	27.3	30.2	30.1
18 to 24	25.1	24.8	23.6	27.7	22.2	22.4	22.7
25 to 34	29.2	25.4	23.0	28.9	22.4	26.6	26.2
35 to 49	26.2	24.9	26.3	26.4	23.9	26.8	26.2
50 to 59	37.5	24.6	29.6	34.0	27.3	35.2	33.8
60 and over	30.0	31.0	34.4	34.1	35.9	42.9	41.4
Teens							
12 to 17	23.1	23.5	21.5	22.2	18.6	19.5	19.5
Children							
2 to 11	22.7	19.3	20.7	23.2	19.8	21.7	21.6
Total population	25.5	23.5	24.3	25.4	23.7	25.6	25.7

21.9 AVERAGE HOURS PER WEEK OF TELEVISION VIEWING[1], BY AGE GROUP AND SEX, FALL 1989 (concluded)

Age and sex	Ont.	Man.	Sask.	Alta.	BC	Canada
Males						
18 and over	21.1	23.0	23.1	21.1	21.3	22.1
18 to 24	16.2	15.6	20.4	18.2	15.0	17.0
25 to 34	19.5	21.3	21.1	18.8	17.8	19.9
35 to 49	18.2	19.6	18.8	18.0	18.1	19.3
50 to 59	21.9	24.3	26.1	25.0	23.8	24.0
60 and over	30.8	33.4	30.9	30.9	32.0	32.0
Females						
18 and over	24.9	26.9	27.7	25.2	24.6	26.7
18 to 24	18.9	23.0	26.0	19.5	17.2	20.8
25 to 34	22.7	25.9	26.0	22.8	21.5	24.1
35 to 49	21.3	22.8	22.3	22.7	21.1	23.2
50 to 59	26.9	26.6	27.9	28.6	27.7	29.5
60 and over	33.6	33.6	35.1	35.0	33.5	35.7
Teens						
12 to 17	17.1	18.3	17.6	17.0	15.4	18.1
Children						
2 to 11	20.9	19.3	19.1	18.8	16.9	20.3
Total population	22.3	23.6	23.7	21.9	21.6	23.4

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[1] *Only at-home viewing is included*

[2] *For Quebec, the language classification is based on the language spoken at home. The total column includes those respondents who did not reply to this question or who indicated a language other than English or French.*

21.10 PERCENTAGE DISTRIBUTION OF TELEVISION VIEWING TIME, BY ORIGIN AND TYPE OF PROGRAM AND ORIGIN OF STATION, FALL 1989[1]

Type of program	Foreign stations			All television stations			
	All programs	Canadian programs	Foreign programs	All programs	Canadian programs	Foreign programs	Total
News and public affairs	2.7	16.6	1.3	17.9	16.6	4.0	20.6
Documentary	0.3	0.7	0.3	1.0	0.7	0.5	1.3
Instruction							
Academic	0.1	1.0	—	1.0	1.0	0.2	1.1
Social/recreational	0.2	1.1	0.5	1.6	1.1	0.7	1.8
Religion	0.1	0.3	—	0.3	0.3	0.1	0.4
Sports	1.0	5.5	1.0	6.6	5.6	2.0	7.6
Variety and games	2.5	5.6	3.1	8.7	5.6	5.5	11.1
Music and dance	—	1.1	—	1.1	1.1	0.1	1.1
Comedy	4.3	0.9	10.1	11.0	0.9	14.4	15.3
Drama	6.9	4.0	17.0	21.0	4.0	23.8	27.9
Other	4.1	—	7.8	7.8	—	11.9	11.9
Total	21.1	36.6	41.2	77.9	36.7	63.3	100.0

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[1] *People two years and older.*

21.11 CANADIAN-AUTHORED OWN TITLES, NET SALES, 1988-89

Commercial category	English language firms				French language firms		Total	
	Canadian controlled		Foreign controlled		No. of firms	Net sales ($'000)	No. of firms	Net sales ($'000)
	No. of firms	Net sales ($'000)	No. of firms	Net sales ($'000)				
Textbooks								
Elementary and secondary	33	33,174	19	74,026	31	59,047	83	166,248
Postsecondary	27	5,133	13	19,521	21	8,433	61	33,088
Total	46	38,307	21	93,548	42	67,480	109	199,336
Tradebooks								
Mass-market paperbacks	14	12,995	3	[1]	10	[1]	27	[1]
Trade paperbacks	118	30,434	12	13,134	58	23,091	188	66,659
Trade hardcovers	68	17,754	10	[1]	15	[1]	93	[1]
Total	127	61,184	15	21,536	62	26,713	204	109,433
Scholarly	30	3,506	—	—	9	970	39	4,476
Reference	37	36,591	5	34,187	21	5,856	63	76,634
Professional and technical	19	56,280	4	13,097	12	5,902	35	75,280
Total	173	195,869	27	162,368	99	106,921	299	465,158

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[1] *Confidential.*

Sources

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Chapter 22

John Boyd/National Archives of Canada/PA 61386

FITNESS AND SPORT

22.1 INTRODUCTION

Edward (Eddy) O'Neill/National Archives of Canada/The Gazette, Montreal/PA 151875

Montreal Royals confer at Delorimier Stadium, Montreal, 1952.

FITNESS IS BECOMING increasingly important to Canadians. More Canadians are walking, gardening, swimming, dancing and playing golf than ever before.

According to the Canada Fitness Survey, some 57% of Canadians aged 10 and over were physically active in their leisure time in 1981. A 1988 follow-up survey conducted by the Canadian Fitness and Lifestyle Research Institute, the Campbell's Survey on Well-Being in Canada, found that figure had climbed to 79%. More than a million Canadians take part in voluntary fitness agencies as organizers and coaches, with many millions more participating in everything from marathons to team sports. Fitness and amateur sporting activities are organized at the local community, provincial and national levels. The YMCA and YWCA have been particularly influential in the development of fitness programming, although these organizations have been joined since the early 1980s by an increasing number of health clubs. Professional and semi-professional sports teams are also found in many of the larger Canadian cities.

22.2 SPORTS HISTORY

The rigours of pioneer life left little time for sports during Canada's early colonial development. Yet sporting competitions were inevitably a part of early Canadian social gatherings, whether they were work "bees," fall fairs or other special occasions. From the indigenous peoples, Canada's settlers learned to snowshoe, canoe, play lacrosse and toboggan. In turn, they brought sporting activities from their own homelands. From England came cricket and rugby. From Scotland came golf; indeed, Scottish officers in the service of General James Wolfe were among the first to play golf in Canada.

The popularity of another Scottish game, curling, which was played on frozen ponds and lakes, shows how climate has influenced the development of Canadian sporting life. Hockey is another significant example. Developed to entertain Canadians during the long winter months, hockey was first played under a formal set of rules in 1875 in Montreal. Before long, amateur hockey leagues had formed from coast to coast.

The final decades of the 1800s were an exciting time in Canadian sport. Hockey was becoming a national pastime, and lacrosse and baseball were gaining popularity. As well, in 1891, another important game was introduced to the Canadian sports scene — basketball. In that year, a Canadian psychology student, James Naismith, developed the game as a suitable sport for indoor play, as part of his studies in Springfield, Massachusetts. Basketball is now played in virtually every country in the world, and has been part of official Olympic competition since 1936.

Glynn A. Leyshon/National Archives of Canada/PA-150986

Duncan McNaughton, gold medallist, high jumping, Los Angeles, 1932.

LET THE GAMES BEGIN...

Canada has competed in international sports events since Confederation, although at the time it was costly and difficult to travel overseas. Today, Canadian athletes' quest for personal excellence and "gold" focuses on three key multi-sport competitions: the Olympics, Commonwealth and Pan-American Games.

THE OLYMPICS

The first Canadian participated in the ***Summer Olympics*** *in 1900 when George Orton, a Canadian studying in the United States, went with the American team to the Paris Games. He won gold in the 3 000-metre (m) steeplechase, and bronze in the 400-m hurdles.*

At the 1906 Olympic Intermediary Games in Athens, Canadian competitor Billy Sherring added a colourful episode to Canadian sporting lore. A benefit concert in Hamilton raised only $75 towards his travel expenses, so he bet the money on a horse. He won $500 and went on to Athens to win gold in the marathon.

Since sending its first "official" team to the 1908 London Olympics, Canada has gone to every Summer Olympics except the Moscow Games of 1980, boycotted to protest the Soviet invasion of Afghanistan.

In 1976, Canada hosted the Olympics in Montreal. While Canada won more medals there than in the two previous Olympics combined, its best performance was a silver in high-jump by Greg Joy. Canada's best Olympic performance came in 1984 in Los Angeles, when Canadians won 44 medals, 10 of them gold.

Canadians have won 40 gold medals at Summer Olympic Games. Notable wins include Percy Williams' double-gold victories (100 and 200 metre dashes) at Amsterdam in 1928, Alex Baumann's double-gold swimming performance at Los Angeles in 1984, and Carolyn Waldo's double-gold in synchronized swimming at Seoul in 1988.

Canadians have competed in every ***Winter Olympics*** *since the first in Chamonix, France, in 1924. They have won 13 gold medals, mainly in hockey, figure skating and skiing, with others in bobsledding and speedskating. The most famous Canadian winter Olympian is Gaétan Boucher, who won two gold medals and one bronze at Sarajevo, Yugoslavia, in 1984.*

In 1988, Calgary hosted the largest-ever Winter Olympics. Canada's Elizabeth Manley and Brian Orser skated to silver medals in women's and men's singles, while Tracy Wilson and Robert McCall won bronze in dance pairs. Skier Karen Percy also took two bronze medals on the slopes.

Canada's Olympic teams are now readying for the Winter Games in Albertville, France, and the Summer Games in Barcelona, Spain, in 1992.

THE COMMONWEALTH GAMES

This competition between athletes of Commonwealth countries was first held as the British Empire Games in Hamilton, Ontario, in 1930. It has grown from 11 countries and 400 athletes to include close to 50 member countries of the Commonwealth.

A great moment in sports occurred at the 1954 Vancouver Commonwealth Games when Roger Bannister of Great Britain became the first person ever to run the mile in less than four minutes.

Canada hosted the Games for a third time in 1978, when more than 1,500 athletes from 46 countries came to Edmonton. Victoria, British Columbia, will host the next Games in August 1994.

THE PAN-AMERICAN GAMES

The Pan-American Games provide a run-up to the Olympic Games for athletes from Western Hemisphere nations. Canada did not go to the first in Buenos Aires in 1959, but has competed in every Games since. When Winnipeg hosted them in 1967, some 2,451 athletes from 29 countries competed in 29 sports.

Canada's finest Pan-American Games performance to date was in 1987 in Indianapolis, where Canadian athletes won 30 gold, 57 silver and 74 bronze medals.

Almost all forms of organized sport in the 1800s were controlled by amateur associations. In 1867, the National Lacrosse Association was established, the first of many Canadians sports organizations. In 1876, the Canadian Baseball Association came into being, and in 1881, the Montreal Amateur Athletic Association became the first "umbrella" organization for a variety of sports. Indeed, the Montreal association pushed hard to regulate sporting competitions under unified rules and helped create the Amateur Athletic Association of Canada, the first of several national sports organizations.

With the start of the 20th century, Canadian athletes began increasingly to represent their country in international athletic competition. Since its first official team attended the 1908 Olympics, Canada has competed in every Olympics except the 1980 games in Moscow, boycotted to protest the Soviet invasion of Afghanistan.

In the 1920s, Canada's amateur boxers, rowers and track and field competitors numbered among the stars of international amateur competition. By the 1930s, however, it was clear that other nations were supporting their amateur athletes more vigorously — and reaping the incumbent rewards. Frank Amyot's Olympic gold finish in canoeing was to be Canada's only medal in the 1936 Berlin Olympics.

22.3 GOVERNMENT SUPPORT

To help promising Canadian athletes reach their potential, the federal government undertook a commitment to support amateur sport, beginning in 1943 with the Canada National Physical Fitness Act. The Fitness and Amateur Sport Act followed in 1961, and in 1969 the Task Force on Sport in Canada recommended greater government support, which resulted in increased funding for amateur athletics. By the 1980s, the government's annual budget in support of amateur athletics exceeded $50 million.

SPORT CANADA

Today, the federal government provides leadership, overall policy direction and financial support to Canadian amateur sport at the national and international levels through **Sport Canada**. Sport Canada, which works to stimulate excellence in Canada's athletes at the international level, has also developed a strong domestic sport system to encourage all Canadians to participate in sports. To do this, it funds and co-ordinates the activities of about 85 national and other sport organizations. Some are national sport governing bodies. Others provide important support services such as administration, coaching and sport medicine.

Through its "core support" program, Sport Canada helps pay for professional, technical and coaching staff, and defrays the costs of meetings, coaching clinics and seminars, and national and international competitions.

This kind of backing has helped Canada place strong teams at major international sporting competitions such as the Olympic, Pan American, Commonwealth, and World University Games. Since 1980, Canadians have been world champions or world record-holders in alpine skiing, speed skating, figure skating, yachting, track and field, equestrian events, swimming, trap shooting, boxing, wrestling and pentathlon. Recent Canadian amateur sports stars include Gaétan Boucher (speed-skating), Carolyn Waldo (synchronized swimming), Kurt Browning (figure skating) Alex Baumann (swimming), Linda Thom (shooting), and Sylvie Bernier (diving).

Sport Canada's "**Best Ever**" winter program was initially established to prepare Canada's "Best Ever" team for the Calgary Olympics and is now supporting the efforts of some 100 athletes preparing to compete in 12 sports in the 1992 Albertville Olympics. As well, the program focuses on increasing participation in winter sports at home among young Canadians — the next generation of Olympians.

Similarly, the "**Best Ever**" summer program was created to develop the Canadian team for the 1988 Seoul Olympics. Beyond ensuring that Canadian athletes received the best possible preparation for the Summer Games, "Best Ever" has helped to develop a sound administrative foundation on which to build future sport programs. The "Best Ever" summer program is now supporting the efforts of 500 athletes who will represent Canada at the Barcelona Olympics in 1992.

PEACH BASKET

Basketball, a game now played around the world, was invented by a Canadian, Dr. James A. Naismith, in 1891. Naismith, who was from the town of Almonte, Ontario, was working as a physical education instructor at the YMCA in Springfield, Massachusetts, and developed the game as a safe, exciting indoor team sport for the long winter months. The first baskets were peach baskets suspended on the balconies at each end of the YMCA gymnasium; when a goal was scored the ball had to be removed by attendants on stepladders.

Beginning with 13 basic rules, the game evolved into a very skilled and competitive sport, becoming an official Olympic event for men in 1936 and for women in 1976. Basketball Canada, the sport's governing body in Canada, estimates that between 300,000 and 350,000 Canadians now play the game at every level, from schools to recreational and competitive leagues.

Basketball Canada

Dr. James A. Naismith, the inventor of basketball.

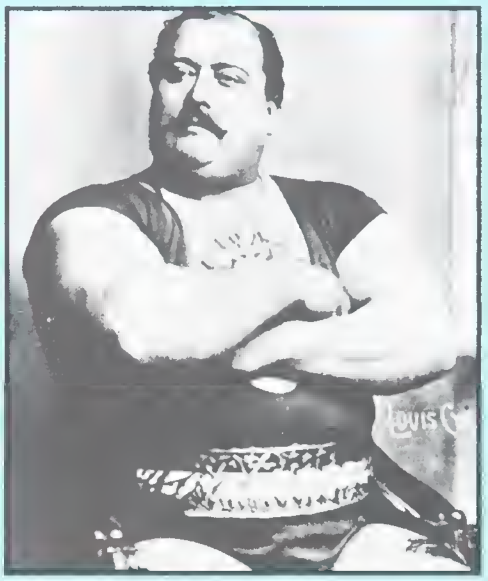
HEROES OF CANADIAN SPORT

Canada's Sports Hall of Fame

Edward "Ned" Hanlan (1855-1908)

Ned Hanlan was Canada's first athlete to gain international recognition. He won the Canadian sculler (rowing) championship in 1877, and the US title a year later. In May 1879, Hanlan proved his abilities once more, defeating the English champion in England by an astonishing 11 lengths.

The following year, 1880, he defeated E.A. Trickett of Australia to become world champion. He defended that title six times before being defeated by William Beach in 1884.



Canada-Wide Features

Louis Cyr (1863-1912)

Quebec's fabled strongman, Louis Cyr won the North American weightlifting championship in 1885 and the world championship in 1892. In 1889 in London, England, Cyr lifted in succession 250 kilograms (kg) with one finger, 1 860 kg on his back and 124 kg above his head with one hand. On the same trip, he held two driving horses to a standstill, one tied to each of his massive arms. His most spectacular achievement came in Boston in 1895, where he lifted a platform on his back holding 18 "fat" men — 1 967 kg — believed to be the heaviest amount ever lifted by a man.

Canada's Sports Hall of Fame

Fanny "Bobbie" Rosenfeld (1905-1969)

"Bobbie" Rosenfeld was voted Canada's female athlete of the first half of the century by the **Canadian Press** *— not because of her mastery of a specific sport but because of her mastery of so many. She was a star in track and field, basketball, hockey, baseball and tennis.*

At the Amsterdam Olympics in 1928 she placed second in the 100 metres (m) and first in the team 4x100 m relays. The same year she set records for the long jump, the standing broad jump and discus that lasted until the 1950s.

Canada's Sports Hall of Fame

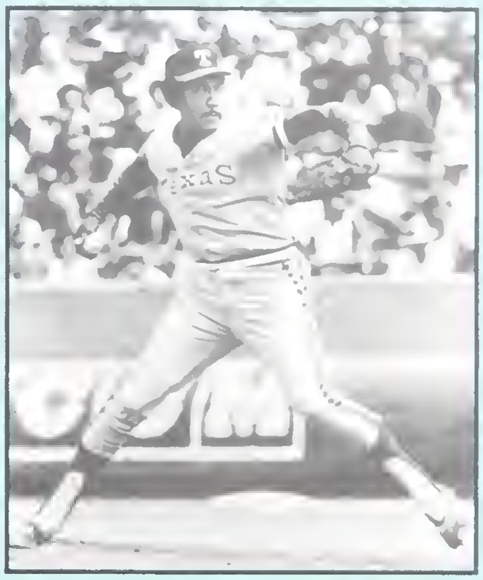
Percy Williams (1908-1982)

Despite a damaged heart caused by childhood rheumatic fever, Percy Williams became the sensation of the 1928 Olympic Games in Amsterdam, winning gold in the 100 m and 200 m sprints. Williams followed up his Olympic triumph with a string of indoor race victories in New York, Chicago, Boston and Philadelphia.

Hockey Hall of Fame

Maurice "Rocket" Richard (1921-)

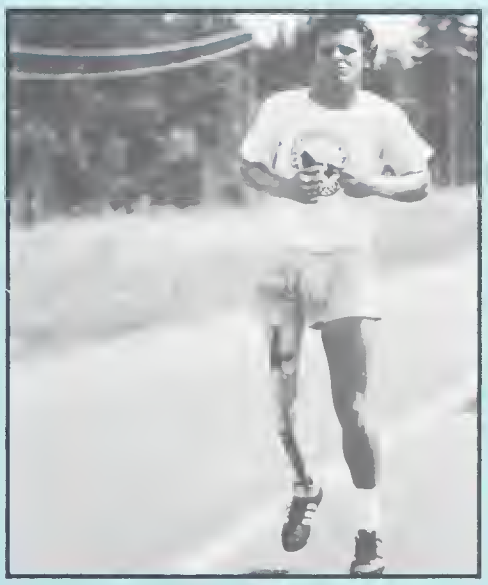
The "Rocket," Quebec's greatest hockey legend, led the Montreal Canadiens to five consecutive Stanley Cups. The first player to score 50 goals in 50 games, the "Rocket" was also named to the All-Star team 14 years in a row. A fiery-tempered player, Richard was suspended for the remainder of the 1951 season for striking an official. Loyal fans responded by rioting in the streets of Montreal.



Canada's Sports Hall of Fame

Ferguson Jenkins (1943-)

Ferguson Jenkins was one of the best pitchers ever to play baseball and the only Canadian to be inducted into the Baseball Hall of Fame in Cooperstown, New York. In 1967, a year after his professional debut, Jenkins began a six-year string of 20 or more victories per season. He eclipsed his own record in 1974, winning 25 games for the Texas Rangers. When his professional career came to an end in 1984, he had won 284 games, recorded 3,192 strikeouts and set a major-league record 363 putouts by a pitcher.



The Terry Fox Run Foundation

Terry Fox (1958-1981)

One of Canada's greatest athletic heroes, Terry Fox, will be remembered for his "Marathon of Hope" across Canada, which began April 12, 1980 in St. John's, Newfoundland. At the time, Fox was recovering from the amputation of his right leg, amputated three years earlier because of bone cancer.

He managed to walk more than 5 500 kilometres, raising over $15 million before cancer in his lungs forced him to stop. Terry Fox died June 28, 1981.

Canadian Figure Skating Association

Barbara-Ann Scott (1928-)

Barbara-Ann Scott was Canada's senior women's ice-skating champion from 1944-48, North American champion from 1945-48 and European and World champion in 1947 and 1948. She then went on to win gold in the 1948 Olympics in St. Moritz. Scott was awarded the Lou Marsh trophy as Canada's athlete of the year in 1945, 1947 and 1948.

After her brilliant amateur career, Scott toured with an ice show as a professional from 1949-54.

HEROES OF CANADIAN SPORT *(Continued)*

Hockey Hall of Fame

Gordie Howe (1928-)

Gordie Howe is one of the greatest examples of longevity and skill in Canadian sports history. Howe played 32 years of professional hockey, over a period of five decades. For 25 seasons he played for the Detroit Red Wings, where he established more NHL records than any other player (until Wayne Gretzky in the 1980s). Howe first retired in 1971, only to join the World Hockey Association's Houston Aeros in 1973 to play alongside two of his sons.

Photopress, Grenoble, France/National Alpine Ski Team

Nancy Greene (1943-)

Nancy Greene dominated women's skiing in the late 1960s. First selected to Canada's 1960 Olympic team at age 17, inconsistent performances in 1966 were followed by a remarkable success the following year when she won the World Cup. In 1968, she won gold in the Olympic giant slalom and silver in the slalom, and nine consecutive victories brought her a second consecutive World Cup.

Canada's Sports Hall of Fame

Russ Jackson (1936-)

Russ Jackson is considered by most to be the greatest Canadian quarterback ever to play football. After graduating from McMaster University he joined the Ottawa Rough Riders, and from 1958 to 1969 established himself as a superb passer, runner and leader. Winner of the Schenley Award and the Lou Marsh trophy, he led the Ottawa Rough Riders to victory in the 1969 Grey Cup game.

Athlete Information Bureau and Canadian Olympic Association

Gaétan Boucher (1958-)

No other Canadian speed skater has equalled the feats of Gaétan Boucher. In the 1984 Winter Olympics in Sarajevo, Yugoslavia, he accomplished one of the greatest performances ever by a Canadian athlete, winning gold in 1 000 m and 1 500 m and bronze in 500 m.

Boucher followed these feats with 1984 and 1985 World Sprint Speed-skating Championship victories.

Hockey Hall of Fame

Wayne Gretzky (1961-)

The "Great Gretzky" has accumulated more National Hockey League records than any other player: 49 by the end of the 1989-90 season. His records include the most points in a season (215 in 1985-86) and the most goals in a single season (92 in 1981-82).

Considered among the finest athletes ever to play in any sport, he has been named the NHL's most valuable player nine times and most sportsmanlike player nine times. In 1988, his long affiliation with the Edmonton Oilers, ended with a trade to the Los Angeles Kings.

Ted Grant/Athlete Information Bureau and Canadian Olympic Assoc

Carolyn Waldo (1964-)

Carolyn Waldo was one of the dominant international synchronized swimmers for several years prior to the 1988 Olympic Games in Seoul, where she became the first Canadian woman to win two gold medals at the same Olympics. Waldo won gold for her single performance and shared top honours with partner Michelle Cameron in the pairs competition.

Athlete Information Bureau

Kurt Browning (1966-)

Kurt Browning first came to prominence in 1988 when he became the first figure skater to successfully complete a quadruple jump in competition. The next year, in Paris, Browning won his first of three straight World Figure Skating Championships, a feat never before accomplished by a Canadian skater.

THE SPORTING-GOODS INDUSTRY

The Canadian sporting-goods industry has undergone tremendous growth over the past 50 years. In 1936, there were about 36 Canadian sporting-goods manufacturers employing some 293 people. This workforce manufactured $11.8 million worth of products. By 1988, 255 manufacturers employed 9,000 people with annual manufacturers shipments worth $767.8 million.

Primary industry sectors include ice sports, bicycles, swimming pools, skiing, gym and golf equipment. Approximately one-quarter of the industry's output is exported, mainly to the US, but increasingly to Europe, Australia and Japan as well.

Day-to-day living and training expenses can be an expensive affair for the amateur athlete. Sport Canada's **Athlete Assistance Program** financially assists Canada's top amateur athletes to defray these costs, allowing them to combine the pursuit of sports excellence with studies or career development. Payments to Canada's top 850 amateur athletes average $5 million per year.

Opportunities in sport have not always been open for women. Indeed, it was not until 1928 that Canada included women in its Olympic team. Sport Canada's **Women's Program** has encouraged women to become involved as leaders in sport at the national level. Through the Women in Sport and Fitness Leadership Program, a revised training program has been initiated for women in sports administration and elite coaching.

The **Program for the Disabled** helps disabled Canadians to excel at sports and fitness-related activities. Sport Canada assists the many projects carried out on behalf of the disabled through a financial contribution to the Canadian Federation of Sport Organizations for the Disabled.

DUBIN COMMISSION

One of the issues confronting sport in Canada and on the international scene has been that of the use of banned substances by some athletes to unfairly improve their performance. As a result of abuse in this area, the Canadian government set up a commission of inquiry headed by Justice Charles Dubin, referred to as the **Dubin Commission.**

Justice Dubin was asked to investigate the extent of the use of banned substances, such as anabolic steroids, by Canadian athletes and by athletes from other countries. After several months of testimony from athletes, coaches and experts in sports medicine, Justice Dubin put forth 70 recommendations. To date, the federal government has supported and acted on 62 of these recommendations, which include scheduled and no-notice drug testing of athletes, stricter controls on the supply and distribution of anabolic steroids, and better education. Further actions by the federal government are under consideration.

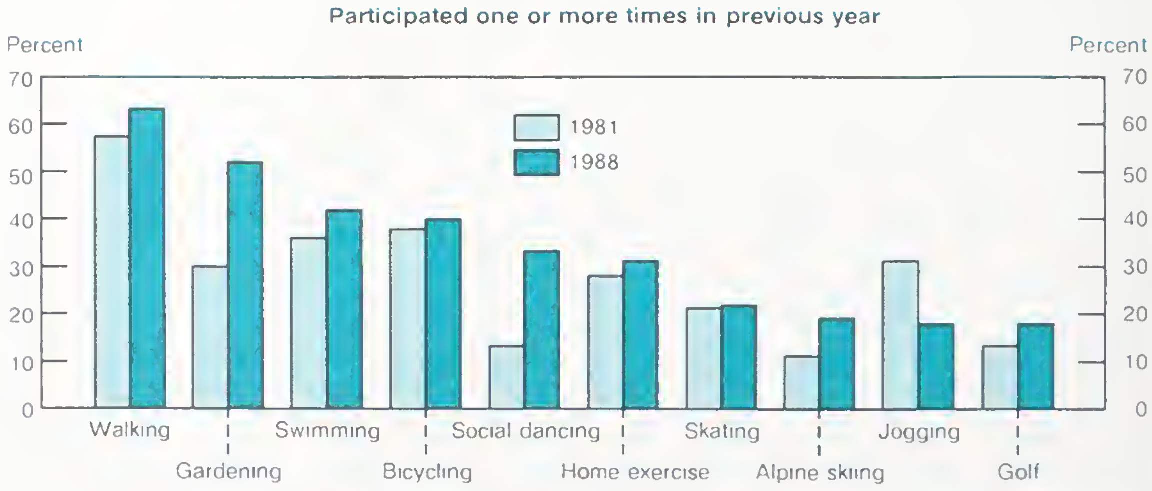
The Dubin Commission was the most extensive investigation of the use of banned substances in sport. Its impact has positively influenced regulation and attitudes toward drug abuse in sport, not only in Canada, but around the world.

SHAPING UP: FITNESS FOR ALL CANADIANS

Although not everyone seeks to become a top athlete, more and more Canadians are realizing that participation in sports and other physical activities are key to improving overall health. Millions of Canadians participate in casual activities such as walking for health, bicycling, swimming and dancing. About 60% of the active people surveyed in the 1988 Campbell's Survey on Well-Being in Canada said they participate in a scheduled weekly activity. Millions more participate in scheduled weekly activities ranging from team sports to aerobic workouts. In fact, participation in all popular forms of physical activities has increased, with the exception of jogging.

Chart 22.1

PARTICIPATION IN PHYSICAL RECREATION ACTIVITIES, 1981 AND 1988 (AGE 10+)



EARLY HOCKEY IN CANADA

It was called shinny back in 1855, when the first recorded hockey game took place among members of Her Majesty's Royal Canadian Rifles, outside Kingston, Ontario.

The action on the ice was chaotic: as many as 60 players on the ice at a time. Skates were blades clamped to boots and oak or ash sticks moved an old tennis ball across the frozen harbour.

British soldiers first brought these variations of stick and ball games, such as shinty and bandy, in the early 19th century. The nickname shinny was derived from shinty, and the word hockey is believed to originate from the French word boquet. Hoquet means shepherd's crook and refers to the shape of the playing stick.

In 1875, the first regulated game of ice hockey was held at Montreal's McGill University. A flat disk or puck took the place of the old tennis ball, teams were pared down to nine players, and a formal set of rules was established.

In 1879, the first organized team, the McGill Hockey Club, was formed. By 1885, Kingston had a league of four teams and by 1895, there were more than 100 hockey clubs in Montreal alone.

National Archives of Canada/PA-91046

Ottawa's "Silver Seven," winners of the 1905 Stanley Cup.

FITNESS CANADA

The federal government promotes fitness through **Fitness Canada**. In 1989-90, Fitness Canada provided close to $8 million in federal funding to 39 organizations and special projects, and continued to collaborate with groups such as the Canadian Fitness and Lifestyle Research Institute, and the Canadian Red Cross Society (Water Safety Services).

The Canada Fitness Award (CFA) is a fitness incentive program that encourages Canadian youth from ages 6 to 17 to develop habits of regular physical activity that will benefit them throughout their lives. Fitness Canada also continues to expand and improve the Canadian Standardized Test of Fitness (CSTF), a package used by fitness appraisers, leaders and other health practitioners who conduct fitness tests and provide exercise prescriptions and counselling.

Canada's Fitweek has become an important spring event for many Canadians, with 8 million participating in more than 14,000 events in communities across the country in 1989.

In 1990, Fitness Canada focused its attention on developing the concept of "Active Living," a milestone in the evolution of a new approach to physical activity. Active Living integrates physical activity in all dimensions of everyday life, encouraging people to bicycle to work, and to play sports rather than watching them on television.

To promote the concept of Active Living, Fitness Canada is developing Blueprints for Action. In 1989-90, a Blueprint for Action aimed at children and youth was completed and released to the public. Other action plans for the disabled and older adults are now in the process of being developed.

22.4 THE MAJOR LEAGUES

At the turn of the century, most Canadian sporting events were contested by amateurs. In fact, to accept payment for play was considered by many to be unethical. This attitude slowly changed. Canadians were showing an interest in watching great feats of athletic ability — and a willingness to pay for the privilege of viewing them.

In the 20th century, technological advances have also helped professional sport advance: air transportation has made city-to-city travel by teams (and their more avid fans) easier; and television has increased visibility and revenues to the point where major-league players can earn millions of dollars each year.

HOCKEY

Canada's greatest contribution to world sport has been hockey. Hockey can be traced to the pen of J.G.A. Creighton, a student at McGill University who wrote down the first set of hockey rules in 1875. Thereafter it quickly spread across the country. By 1886, the Amateur Hockey Association of Canada had formed, and hockey remained an amateur affair until early in the 20th century. In 1917, the rival Eastern Canada Hockey Association and National Hockey Association merged to form the National Hockey League (NHL), and "professional" teams began to dominate the league.

The NHL moved into the US, adding the Boston Bruins, New York Americans (1925), Pittsburgh Pirates (1925), New York Rangers (1926), Chicago Blackhawks (1926) and Detroit Cougars (1926). After rapid expansion, the league dwindled to six teams, with only the Montreal Canadiens and Toronto Maple Leafs in Canada.

A rival professional league, the World Hockey Association (WHA) began play in 1972, but eventually merged with the NHL in 1979. The NHL continues to expand, and now comprises over 20 teams. The Canadian teams are: Montreal Canadiens, Toronto Maple Leafs, Vancouver Canucks, Edmonton Oilers, Winnipeg Jets, Quebec Nordiques, Calgary Flames and the Ottawa Senators.

The NHL relies heavily on Canada's amateur youth hockey leagues as a source of talent. Over 350,000 young Canadians play in organized leagues, while over 30,000 adult Canadians play in recreational and senior leagues.

Although Canada continues to supply most of the talent for the National Hockey League, an increasing number of European players as well as Americans now play in the NHL.

FOOTBALL

Canadian football has its roots in English rugby. The story of its development includes an interesting anecdote. In the 1870s, a hybrid of rugby was being played at McGill University, and at the invitation of Harvard University, the team went to Cambridge, Massachusetts for a tournament. The team arrived to find Harvard playing a variety of soccer, rather than rugby. Although this might have presented a problem, the issue was resolved by playing two games, one following the rules of McGill, the other following those of Harvard. The event proved to be significant. Harvard adopted the McGill game as its own, and soon persuaded other US eastern university teams, known as the "Ivy League" to do the same. This became the basis of American football, which in turn had a significant impact on the development of Canadian football.

The most coveted prize in Canadian football is the Grey Cup. Between 1909 and 1925, the Grey Cup game was usually played between two intercollegiate teams. Thereafter, city-based teams with some professional players began to dominate the sport. These teams often imported players from the US, prompting new rules limiting the number of American players allowed on each team.

CANADA-SOVIET HOCKEY

During the first half of the century, Canada's supremacy in hockey was undisputed. In the 1950s, this changed as the Soviet Union's post-war interest in hockey began to produce results. In 1954, the Soviets won their first world hockey championship, and in the following year, they won the gold medal at the Olympics.

From 1963-73, the Soviets won 11 of 12 Olympic and world hockey championships. But Canadians still believed that if the Soviets met Canada's best hockey players — those from the National Hockey League — rather than Canada's amateur players, Canada would win easily.

In the 1972 Canada-Soviet Series, Canada managed to win the overall series with a record of four wins, three losses and a tie. Paul Henderson became an instant hero when he scored the winning goal in the final game of the series with just seconds remaining.

The rivalry between the best players from each country has continued in Canada Cup competitions, held every three or four years. Canada has won all but the 1981 series.

The Soviets continue to be the major force in international amateur play, although Canada's junior teams have recorded several world championship victories in recent years.

In 1952, television coverage greatly increased the visibility of the Canadian game. Until 1987, the Canadian Football League, the only professional league in Canada, had nine teams, when the Montreal team folded, leaving eight.

Football continues to be played at the university and college level and, unlike baseball, is played in organized high-school leagues across the country.

BASEBALL

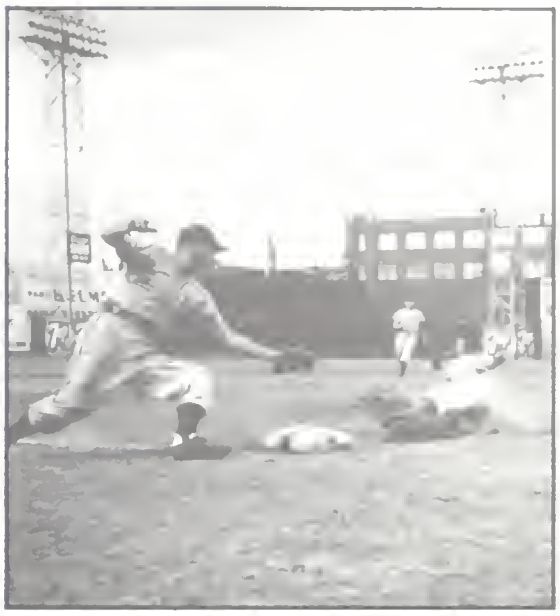
In its modern nine-player per team format, baseball was first played in Beachville, Upper Canada, in 1838 — seven years before the New York Knickerbockers are said to have "invented" it. By 1868, large financial prizes had introduced "professional" status to the game, something avoided by other sports such as hockey until the 20th century.

In 1876, the first Canadian professional league was born, with teams from Kingston, Toronto, Hamilton, Guelph and London. For much of the 20th century, both Toronto and Montreal had Triple-A professional teams, a league of major-league farm teams in Canada and the US.

The first major-league franchise to be awarded outside the United States went to Montreal in 1969, when the Montreal Expos joined the National League. The Toronto Blue Jays followed in 1977, joining the rival American League. The Expos have drawn crowds of over 2.3 million in one season, while the Blue Jays, playing in the Skydome, set an American League record in 1990 of 3.9 million.

National television coverage of these teams has greatly increased the popularity of baseball as a spectator sport, but baseball has always been a popular amateur activity for thousands of Canadians. There are approximately a quarter of a million registered amateur Canadian baseball players, and a further half a million who play softball, a derivative of baseball.

Despite its popularity, only 140 Canadians have played in the major leagues. Notable among them is Ferguson Jenkins, the only Canadian inducted into the Baseball Hall of Fame in Cooperstown, New York.



National Archives of Canada/The Gazette Montreal/PA 151879

Montreal Royals player slides to base in game versus the Ottawa Athletics of the International League, at Delorimier Stadium, Montreal, 1952.

Sources

Canadian Baseball Hall of Fame and Museum.
Canadian Fitness and Lifestyle Research Institute.
Canadian Hockey Hall of Fame.
Canadian Sports Hall of Fame.
Fitness Canada.
Sport Canada.
Statistics Canada.

Appendix A

FEDERAL GOVERNMENT DEPARTMENTS, AGENCIES AND CROWN CORPORATIONS

The following list and description of the programs and services provided by federal organizations, including departments, agencies, boards and Crown corporations, has been updated to 1990-91.

Agricultural Stabilization Board

Ottawa, Ontario
K1A 0C5

Information: Ottawa/Hull (613) 957-7078.

The Agricultural Stabilization Board's objective is to stabilize the prices of agricultural commodities in order to assist the industry of agriculture to realize fair returns for its labour and investment, and to maintain a fair relationship between prices received by farmers and the cost of goods and services that they buy, thus to provide farmers with a fair share of the national income.

Agriculture Canada

Head office
Sir John Carling Building
Central Experimental Farm
930 Carling Avenue
Ottawa, Ontario K1A 0C5

Regional, district and branch offices: throughout Canada.

Experimental farms and research stations: throughout Canada.

Information: Ottawa/Hull (613) 995-5222.

The Department of Agriculture was established in 1867, the year of Confederation, by an Act of Parliament. The Experimental Farms System was formed in 1886 and a Dairy Commissioner was appointed in 1890.

The mandate of the Department of Agriculture is to promote the growth, stability and competitiveness of the agri-food sector through policies, programs and services most appropriately provided by the federal government to assist the sectors to maximize their real contribution to the Canadian economy. The department's responsibilities embrace most aspects of the agricultural industry. It carries out research into the physical and economic problems of agriculture; inspects and grades farm products; and carries out programs aimed at keeping our crops and livestock safe from disease and insect pests. The department enforces laws governing the sales of feed, fertilizers and pesticides; and assists farmers through measures such as price stabilization and crop insurance. It also provides consumer-oriented food advisory services and supervises race track betting.

Atomic Energy Control Board

Head office
Martel Building
270 Albert Street
PO Box 1046
Ottawa, Ontario
K1P 5S9

Regional offices: Calgary, Elliot Lake, Mississauga, Montreal.

Information: Ottawa/Hull (613) 995-5894.

The AECB is the federal regulatory agency responsible for the control of health, safety, and national and international security aspects of prescribed nuclear energy substances and items, and nuclear facilities. The AECB is also responsible for the administration of the Nuclear Liability Act.

Atomic Energy of Canada Limited

Corporate office
344 Slater Street
Ottawa, Ontario
K1A 0S4

Regional offices: Pinawa, Mississauga, Chalk River, Ottawa, Kanata, Montreal, Port Hawkesbury, Bécancour, Glace Bay, Saskatoon.

Information: Ottawa/Hull (613) 237-3270.

Atomic Energy of Canada Limited is responsible for the research and development of peaceful uses of nuclear energy, including the development of nuclear power systems.

Auditor General of Canada (Office of the)

Head office
C.D. Howe Building
240 Sparks Street
Ottawa, Ontario
K1A 0G6

Regional offices: Vancouver, Edmonton, Regina, Winnipeg, Montreal, Halifax.

Information: Ottawa/Hull (613) 995-3766.

The Office of the Auditor General of Canada is responsible for examining the Public Accounts of Canada, including those relating to the Consolidated Revenue Fund, public property and various Crown corporations. The Auditor General performs comprehensive audits of departments and agencies and special examinations of certain Crown corporations, and conducts government-wide studies of issues involving the management of financial, physical and human resources of the federal government. The Auditor General reports annually to the House of Commons but may make a special report to the House on any matter that he/she believes should not be deferred until the annual report.

Bank of Canada

234 Wellington Street
Ottawa, Ontario
K1A 0G9

Bank of Canada agencies: Vancouver, Calgary, Regina, Winnipeg, Toronto, Ottawa, Montreal, Saint John, Halifax.

Information: Ottawa/Hull (613) 782-8111.

The Bank of Canada formulates and implements monetary policy and acts as fiscal agent to the Government of Canada. The Bank of Canada Act gives the Bank the sole right to issue notes intended for circulation in Canada.

The Canada Council

Head office
99 Metcalfe Street
PO Box 1047
Ottawa, Ontario
K1P 5V8

Regional office: Moncton.

Information: Ottawa/Hull (613) 598-4365 or 598-4366 (station to station collect calls accepted).

The Canada Council was created by an Act of Parliament in 1957. Under the terms of the Canada Council Act, the objects of the Council are to foster and promote the study and enjoyment of, and the production of works in, the arts. To fulfil this mandate, the Council offers a broad range of grants and services to artists and other arts professionals and to arts organizations. The Council also maintains the secretariat for the Canadian Commission for UNESCO, administers the Killam Program of scholarly awards and prizes, and offers a number of other prestigious awards.

Canada Deposit Insurance Corporation

Head office
320 Queen Street,
22nd Floor
PO Box 2340, Station D
Ottawa, Ontario
K1P 5W5

Regional office: Toronto.

Information: Ottawa/Hull (613) 996-2081; Toronto (416) 973-3887, 1-800-267-1999.

The Canada Deposit Insurance Corporation (CDIC) was established in 1967 under the Canada Deposit Insurance Corporation Act. The objectives of CDIC are to provide insurance against the loss of part or all of deposits made with members, to be instrumental in the promotion of sound business and financial practices for member institutions, and to promote and otherwise contribute to the stability and competitiveness of the financial system in Canada. These objectives are to be pursued for the benefit of depositors and in a manner so as to minimize the exposure of the Corporation to loss. CDIC has the power to provide loans of last resort to member institutions and to Canadian-controlled sales finance companies and it may also grant short-term loans, for liquidity purposes, to co-operative credit societies and provincially created corporations that provide money to credit unions.

Canada Labour Relations Board

Head office
C.D. Howe Building
4th Floor West
240 Sparks Street
Ottawa, Ontario
K1A 0X8

Regional offices: Vancouver, Winnipeg, Toronto, Montreal, Dartmouth.

Information: Ottawa/Hull (613) 996-9466.

The original Canada Labour Relations Board (organized in 1948) was composed of members representing both management and labour appointed by the federal government to deal, on a part-time basis, with the orderly resolution of trade union representation disputes under the Industrial Relations and Disputes Investigation Act.

The Canada Labour Relations Board was established in its present form in 1972 by the amended Canada Labour Code and became effective March 1, 1973. The Board is a quasi-judicial body with statutory and regulatory powers pertaining to the administration of Part 1 of the Canada Labour Code dealing with industrial relations. The members of the Board are non-reprensentational full-time appointees with experience and knowldege of industrial relations and labour law. As members of a non-partisan board they are prohibited from holding any other remunerated office or employment. In general, Part 1 of the Canada Labour Code charges the Board with a twofold responsibility: that of granting, modifying and terminating bargaining rights, and that of resolving, through mediation or adjudication, complaints of unfair labour practice concerning violations of the Code by trade unions or employers.

Under Part II of the Code, the Board must, upon referral of a safety officer's decision, inquire into the circumstances giving rise to the decision and may confirm the decision or give any direction which the safety officer is entitled to give. The Board also rules on complaints by employees that they have been discriminated against or punished for exercising their rights in relation to safety.

Canada Lands Company Limited

Sir Charles Tupper Building
Riverside Drive
Ottawa, Ontario
K1A 0M2

Information: Ottawa/Hull (613) 736-2774.

The Canada Lands Company Limited has, by virtue of its letters patent of incorporation, the power to acquire, purchase, lease, hold, improve, manage, exchange, sell, turn to account or otherwise deal in or dispose of real or personal property or an interest therein. However, it has been used only to hold certain leasehold interests in one property in London, England, and two properties on Indian reserves in Canada. The corporation is also the sole or majority shareholder in four subsidiary corporations.

The Canada Lands Company Limited has no staff and no budget. Its three directors are employees of Public Works Canada.

Canada Mortgage and Housing Corporation

Head Office
682 Montreal Road
Ottawa, Ontario
K1A 0P7

Regional offices: Vancouver, Saskatoon, Toronto (Willowdale), Montreal, Saint John.

Local offices: throughout Canada.

Information: Ottawa/Hull (613) 748-2000.

CMHC's purpose, as embodied in the National Housing Act, is to promote the construction of new houses, the repair and the modernization of existing housing, and the improvement of housing and living conditions. In addition, the CMHC, through the Act, assists in furthering government objectives such as economic growth, job creation and energy conservation.

Canada Ports Corporation

National office
99 Metcalfe Street
Ottawa, Ontario
K1A 0N6

Information: Ottawa/Hull (613) 957-6787 (95-PORTS).

Canada Ports Corporation was established in 1983 pursuant to the Canada Ports Corporation Act. This Act amended the National Harbours Board Act of 1936, the Government Harbours and Piers Act and the 1964 Harbour Commission Act.

Since 1983, pursuant to the Canada Ports Corporation Act, the ports of St. John's, Halifax, Saint John, Quebec, Montreal, Vancouver and Prince Rupert have met the criteria of national and regional significance and financial viability and have been established as local port corporations.

Canada Ports Corporation is responsible for administering its ports under a common objective and ensuring that they meet the federal government's responsibility for national ports and the optimum deployment of resources. Canada Ports Corporation shares, with other marine components, the broad objective of attending to the development and operation of a safe and efficient national marine transporation system.

Canada Ports Corporation is also responsible for ensuring that ongoing maintenance, upgrading and major expansions to port facilities and infrastructure will provide enhanced services to port users, on a comptetitive and cost-effective basis, both for domestic and international customers.

Divisional ports, which are directly administered by the Canada Ports Corporation, are located in Belledune, Chicoutimi, Baie-des-Ha! Ha!, Sept-Îles and Trois-Rivières, Que.; Prescott and Port Colborne, Ont.; and Churchill, Man.

Canada Post Corporation

Head office
Sir Alexander Campbell Building
Confederation Heights
Ottawa, Ontario
K1A 0B1

Divisional offices: Vancouver, Edmonton, Winnipeg, London, Toronto, Ottawa, Montreal, Quebec, Halifax.

Information: Ottawa/Hull (613) 734-6872.

Canada Post, a federal Crown corporation, collects, processes and delivers mail across Canada, and between Canada and more than 165 other countries around the world. The Corporation delivers nine billion messages and parcels annually to more than 11 million addresses in rural and urban Canada. Products and services are marketed through a network of over 16,700 points of sales, more than 68% of which are operated by private businesses.

Canada Post, with approximately 60,000 full- and part-time employees, has the third larges work force in Canada outside of government and, with approximately $3.6 billion in annual revenue, is a large and important part of the transportion and communications sectors of the Canada economy.

Canadian Advisory Council on the Status of Women

110 O'Connor Street
9th Floor
PO Box 1541, Station B
Ottawa, Ontario
K1P 5R5

Regional offices: Calgary, Montreal.

Information: Ottawa/Hull (613) 992-4975

The Canadian Advisory Council on the Status of Women was established in 1973 and is responsible for making recommendations for change in legislation and other measures to improve the status of women through the Minister responsible for the Status of Women. The Council regularly liaises with national women's groups and provincial advisory councils on the status of women.

Canadian Broadcasting Corporation

Head office
1500 Bronson Avenue
PO Box 8478
Ottawa, Ontario
K1G 3J5

Headquarters (English networks): Toronto; (French networks): Montreal; (International): Montreal.

Regional offices: (English): Vancouver, Edmonton, Regina, Winnipeg, Toronto, Ottawa (including Northern Service), Montreal, Halifax, St. John's; (French): Vancouver, Edmonton, Regina, Winnipeg, Toronto, Montreal, Quebec, Rimouski (for Eastern Quebec), Moncton.

Local offices: throughout Canada.

Information: Ottawa/Hull (613) 724-1200.

The CBC is a publicly-owned corporation established by an act of the Canadian Parliament to provide the national broadcasting service in Canada.

Canadian Centre for Occupational Health and Safety

250 Main Street East
Hamilton, Ontario
L8N 1H6

Information: Hamilton (416) 572-4400 or toll-free 1-800-263-8466.

The Centre promotes healthier and safer places of work in Canada by responding to inquiries from people interested in occupational health and safety. It is federally funded, and governed by a Council of Governors representing government (federal, provincial and territorial), labour and employers. The Centre gathers, analyzes, interprets and disseminates occupational health and safety information through publications, responses to inquiries, creation of computer data bases and access to these data bases and acquired international data bases through a national network of connected organizations. It provides its services free of charge in English and French, the identity of inquirers is kept confidential.

Canadian Commercial Corporation

50 O'Connor Street,
11th Floor
Ottawa, Ontario
K1A 0S6

Information: Ottawa (613) 996-0034

Export sales: by serving as prime contractor in government-to-government sales transactions, the Corporation facilitates the export of a wide range of goods and services from Canadian sources. In response to requests by foreign governments and international agencies for individual products or services, the Canadian Commercial Corporation (CCC) identifies Canadian firms capable of meeting the customer's requirements, executes prime as well as back-to-back contracts, and follows through with the contract management, inspection, acceptance and payment aspects of each sale.

Canadian Cultural Property Export Review Board

c/o Communications Canada
Cultural Affairs, Room 500
300 Slater Street
Ottawa, Ontario
K1A 0C8

Information: Ottawa/Hull (613) 990-4161.

The Review Board is responsible for preserving in Canada significant examples of Canadian heritage in movable cultural property, reviewing applications for export permits, making determinations on fair cash offers to purchase and making determinations for the purposes of the Income Tax Act. It also provides advice to the Minister of Communications on matters affecting the preservation in Canada of the heritage in movable cultural property.
In particular, it recommends to the Minister, pursuant to Section 29 of the Act, grants and loans to designated institutions and public authorities in Canada for the purchase of objects for which permits have been refused under the Act, or for the purchase of cultural

property outside Canada that is related to the national heritage. The grants and loans are made out of monies appropriated annually by Parliament

Canadian Dairy Commission

Pebb Building
2197 Riverside Drive
Ottawa, Ontario
K1A 0Z2

Information: Ottawa/Hull (613) 998-9490.

The Commission administers a national dairy policy whose objective is to achieve a healthy, viable dairy industry. It aims to provide efficient milk and cream producers with the opportunity of obtaining a fair return for their labour and investment, and to provide consumers with a continuous and adequate supply of high-quality dairy products.

Canadian General Standards Board

Phase III
9C1 Place du Portage
Hull, Quebec
(Mail: Ottawa, Ontario K1A 1G6)

Information: Ottawa/Hull (819) 956-0432.

The Canadian General Standards Board, by means of a voluntary consensus process, provides standards and certification-listing programs covering various products, services and systems, to all levels of government and the private sector.

Canadian Government Publishing Centre

45 Sacre Coeur Boulevard
Hull, Quebec
K1A 0S7

Information: Ottawa/Hull (819) 997-4962.

The Canadian Government Publishing Centre co-ordinates the publishing activities of departments and agencies of the Government of Canada, with the objective of effectively and efficiently maximizing public awareness of government policies, programs and services. These activities include managing the associated bookstores program which enables Canadians to purchase federal government publications through commercial and university bookstores across Canada. It is equally responsible for the Depository Services Program whereby these publications may be consulted in over 900 public and university libraries throughout the country. The Centre's activities also include a telephone referral service called Reference Canada which enables Canadians nationwide to call the federal government and obtain information on government services and programs, free of charge. It is also responsible for the publication of the *Canada Gazette*, the official medium for informing the Canadian public of all legally binding decisions made by the Government of Canada.

Canadian Grain Commission

Head office
303 Main Street, Suite 600
Winnipeg, Manitoba
R3C 3G8

Regional offices: throughout British Columbia, Alberta, Saskatchewan, Ontario and Quebec.

Information: Winnipeg (204) 983-2770.

The Canadian Grain Commission is responsible for the official inspection and grading of grain, and the establishing of grade specifications and standards. It issues licences to grain elevator operators and grain dealers, supervises bonding of licensees and insurance coverage on grain in licensed elevators, provides registration and documentation services, compiles and publishes grain-handling statistics, maintains a laboratory for basic and applied research relating to cereal grains and oilseeds, and supervises weighing of grain at terminal and transfer elevators. The Commission is also responsible for supervision of trading in grain futures.

Canadian Human Rights Commission

Head office
320 Queen Street
Place de Ville
Ottawa, Ontario
K1A 1E1

Regional offices: Vancouver, Edmonton, Winnipeg, Toronto, Ottawa, Montreal, Halifax.

Information: Ottawa/Hull (613) 995-1151; Telecommunications Device for the Deaf (TDD) (613) 996-5211. (Collect calls are accepted throughout Canada.)

The Commission's mandate is to foster the principle that every individual should have an equal opportunity to participate in all spheres of Canadian life, consistent with his or her duties and obligations as a member of society.

This mandate is carried out in two ways. First it deals with complaints of discrimination in employment or in the provision of goods, services, facilities or accommodation based on 10 prohibited grounds of discrimination: race, national or ethnic origin, colour, religion, age, sex, marital status, family status, disability, or conviction of an offence for which a pardon has been granted. Its jurisdiction includes federal government departments and agencies, Crown corporations and institutions such as chartered banks, airlines, interprovincial transportation systems, as well as the federally-regulated portions of the private sector. In order to deal with complaints of discrimination, the Commission must collect personal information about the complainant, employees of the respondent, and third parties. The information could include race, age, marital status, medical or educational history, and is used in order to determine whether there has been a violation of the Canadian Human Rights Act.

Secondly, the Commission conducts information programs in the field of human rights, provides advice, issues guidelines, conducts research, reviews regulations and other instruments, maintains close liaison with the provinces and endeavours to reduce discriminatory practices.

Canadian Institute for International Peace and Security

Constitution Square
360 Albert Street, 9th Floor
Ottawa, Ontario
K1R 7X7

Information: Ottawa/Hull (613) 990-1593.

The Canadian Institute for International Peace and Security was established in 1984. The objective of the Institute is to foster, fund and conduct research on matters relating to international peace and security; to promote scholarships in matters relating to international peace and security; to study and propose ideas and policies for the enhancement of international peace and security; and to collect and disseminate information on, and encourage public discussion of, issues concerning international peace and security.

Canadian International Development Agency

Place du Centre
200 Promenade du Portage
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0G4)

Information: Ottawa/Hull (819) 997-5006.

CIDA administers most of the Canadian development co-operation program. Its goal is to help the peoples and countries of the Third World achieve self-sustaining social and economic development. CIDA focuses its efforts on the poorest countries and pays special attention to three crucial aspects of development: agriculture (including fisheries and forestry), energy, and human resource development.

Canadian International Grains Institute

303 Main Street, Suite 1000
Winnipeg, Manitoba
R3C 3G7

Information: Winnipeg (204) 983-5344.

The Institute is a non-profit corporation offering instructional programs in grain handling, transportation, marketing and technology, to provide market development support for Canada's grain and oilseed industry. The Institute is affiliated with the Canadian Wheat Board and the Canadian Grain Commission and works closely with Agriculture Canada, the grain business and academic community. By providing buyers and potential buyers of Canadian grain with a better understanding of Canada's grain industry and the world grain industry, the Institute contributes to the maintenance and enlargement of markets for Canadian grain and oilseeds and their products. Course participation is by invitation only.

Canadian International Trade Tribunal

Journal Tower South, 19th Floor
365 Laurier Avenue West
Ottawa, Ontario
K1A 0G7

Information: Ottawa/Hull (613) 993-3595.

The Tribunal conducts inquiries to determine whether dumped, subsidized or low-cost imports cause or threaten material injury to Canadian production of like goods.

Canadian Museum of Civilization

PO Box 3100, Station B
Hull, Quebec
J8X 4H2

Information: (819) 776-7160.

The Canadian Museum of Civilization (CMC), a Crown corporation, was established in 1990 by the Museums Act. The purposes of the corporation, as defined in the Act, are to demonstrate the products of nature and the works of human beings, with special but not exclusive reference to Canada, so as to promote interest in and disseminate knowledge of these throughout Canada.

Canadian Museum of Nature

219 Argyle Street, 4th Floor
PO Box 3443, Station D
Ottawa, Ontario
K1P 6P4

Information: (613) 990-6416.

The Canadian Museum of Nature (CMN), a Crown corporation, was established in 1990 by the Museums Act. The purposes of the corporation, as defined in the Act, are to establish and maintain for research and posterity a collection of natural history objects, with special but not exclusive reference to Canada, and to use the collection, the knowledge derived from it and the understanding it represents, to increase throughout Canada and internationally, interest, knowledge, appreciation and respect for the natural world.

Canadian Patents and Development Limited

275 Slater Street, 19th Floor
Ottawa, Ontario
K1A 0R3

Information: Ottawa/Hull (613) 990-6100.

Canadian Patents and Development Limited (CPDL) has, as its main objective to make available to the public the industrial and intellectual property that results from research and development that is publicly funded. The corporation was established in 1947 to protect and market Crown-owned technology that had been developed during World War II, as well as administer the new forms of technology expected to be produced in the future by federal government departments and agencies. From 1948 onwards, the corporation's mandate has been expanded to include the administration of technology developed by universities, provincial research institutes and other non-profit organizations.

As the central agency of the federal government involved in technology transfer, the corporation provides many services to its sources, which are vital to the success of the overall government technology transfer process.

Canadian Radio-television and Telecommunications Commission

Les Terrasses de la Chaudière
Central Building
1 Promenade du Portage
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0N2)

Regional offices: Vancouver, Winnipeg, Montreal, Halifax

Information: Ottawa/Hull (819) 997-0313. Telecommunications Device for the Deaf (TDD) (819) 994-0423.

The CRTC regulates both public and private broadcasters. It has the power to issue, renew, amend, suspend or revoke licences, and to set any conditions of licence it feels necessary. With respect to federally regulated telecommunications carriers (Bell Canada, the British Columbia Telephone Company, CNCP Telecommunications, Telesat Canada, Terra Nova Telecommunications Inc. and NorthwesTel Inc.), the CRTC has the power to ensure that the rates charged by the carriers are just and reasonable. The Commission's approval is also required for traffic agreements and capital stock issues.

Canadian Saltfish Corporation

Torbay Road at Newfoundland Drive
PO Box 9440
St. John's, Newfoundland
A1A 2Y3

Information: (709) 772-6069.

The Corporation is the sole buyer and seller of cured codfish in the province of Newfoundland and in part of the province of Quebec. This power is based on federal legislation (the Saltfish Act) and supporting legislation from the provinces of Newfoundland and Quebec.

Canadian Security Intelligence Service

PO Box 9732
Ottawa, Ontario
K1G 4G4

Information: Ottawa/Hull (613) 782-0100.

The Canadian Security Intelligence Service is responsible for investigating and advising the government on threats to the security of Canada and providing security assessments to government departments, pursuant to the authority of the Canadian Security Intelligence Service Act.

Canadian Transportation Accident Investigation and Safety Board

Uplands Airport, Building U-100
Box 9120, Alta Vista Terminal
Ottawa, Ontario
K1G 3T8

Information: (613) 998-8230.

The Canadian Aviation Safety Board that was created in 1984 changed its name on March 29, 1990 when Bill C-2 was promulgated. This legislation created the new Canadian Transportation Accident Investigation and Safety Board (also known as Transportation Safety Board of Canada) and amalgamates the Canadian Aviation Safety Board, the Rail and Pipeline Investigation Unit from the National Transportation Agency, and the Marine Casualty Investigation Unit from Transport Canada.

The Transportation Safety Board has the exclusive jurisdiction to investigate transportation occurrences, in the civil aviation, marine, rail and commodity pipeline modes of transporation. The objective of the Board is to advance transporation safety and this is accomplished by reporting publicly on its investigations and public inquiries and on the related findings and recommendations.

Canadian Wheat Board

423 Main Street
PO Box 816
Winnipeg, Manitoba
R3C 2P5

Regional offices: Vancouver, Montreal.

Information: Winnipeg (204) 983-3421.

The Canadian Wheat Board has sole jurisdiction over export sales of wheat and barley produced in Western Canada, and over the domestic sale of these grains for human consumption. It also controls the delivery of these and other major grains, and co-ordinates their movement to terminal elevators. Marketing of oats was also under the Board's jurisdiction, but was withdrawn as of August 1, 1989.

Communications Canada

Head office
Journal Tower North
300 Slater Street
Ottawa, Ontario
K1A 0C8

Regional offices: Vancouver, Winnipeg, Toronto, Montreal, Moncton.

District offices: throughout Canada.

Information: Ottawa/Hull (613) 990-4900.

In the field of telecommunications, the department is concerned with the electronic means of creating, processing, storing, distributing, displaying, accessing, and exchanging information. Its activities are focused on broadcasting, communications research and on Canada's role in satellite communications. Its clientele consists largely of private and public sector institutions that either manufacture equipment or provide services. In the cultural field, the department is concerned with a host of public and private institutions and with the cultural content that flows through electronic and non-electronic channels of communications. It includes among its clients the creators and administrators of cultural content.

Competition Tribunal

Royal Bank Building, Room 600
90 Sparks Street
Ottawa, Ontario
(Mail: PO Box 1899, Station B,
Ottawa, Ontario K1P 5R5)

Information: Ottawa/Hull (613) 957-3172.

The Competition Tribunal is a court of record to hear and determine all applications made to it in relation to matters falling under Part VIII of the Competition Act. The registry of the Competition Tribunal provides registry, research and administrative assistance to the Tribunal for the timely and expeditious conduct of its hearings which may be held throughout Canada as the Tribunal considers necessary or desirable for the proper conduct of its business.

The objective of the Competition Tribunal is to maintain and encourage competition in the Canadian economy by providing a court of record to hear and determine all applications under Part VIII of the Competition Act pertaining to anti-competitive behaviour on the part of individuals and corporations.

Consumer and Corporate Affairs Canada

Head office
Place du Portage
50 Victoria Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0C9)

Regional offices: Vancouver, Winnipeg, Toronto (Willowdale), Montreal, Halifax.

District and area offices: throughout Canada.

Information: Ottawa/Hull (819) 997-2938; Telecommunications Device for the Deaf (TDD) (819) 994-0067.

The department is concerned with the conduct of the marketplace and aims to increase its efficiency. It strives, through legislation and regulation, to balance the interests of consumers and business, and to maintain confidence in the integrity and viability of private enterprise. The department also supports the consumer movement.

Copyright Board Canada

Vanguard Building, Suite 501
171 Slater Street
Ottawa, Ontario
K1A 0C9

Information: Ottawa/Hull (613) 952-8621

The Copyright Board came into existence on February 1, 1989 to amend the Copyright Act assented to on June 8, 1988. The Board has jurisdiction over a number of matters. It is responsible for the fixing of royalties payable to licensing bodies for the performance of musical and dramatico-musical works and for the fixing of royalties payable to collecting bodies for the retransmission of distant television and radio signals.

Correctional Investigator (Office of the)

PO Box 2324, Station D
Ottawa, Ontario
K1P 5W5

Information: Ottawa/Hull (613) 990-2692.

The Office of the Correctional Investigator investigates complaints from inmates, as defined in the Penitentiary Act. It also reports on problems of inmates, raised through complaints, that come within the responsibility of the Solicitor General of Canada, except for problems where the person complaining has not, in the opinion of the Correctional Investigator, exhausted all available legal or administrative remedies; problems concerning any subject matter that ceased to exist or to be the subject of complaint more than one year before the lodging of the complaint with the Commissioner (Correctional Investigator); and problems concerning any subject matter or conditions under the responsibility of the Solicitor General of Canada that touch on the preparation of material for consideration of the National Parole Board. Further, the Commissioner need not investigate if the subject matter of a complaint has previously been investigated or if, in the opinion of the Commissioner, a person complaining has no valid interest in the matter.

Correctional Service of Canada

Head office
Sir Wilfrid Laurier Building
340 Laurier Avenue West
Ottawa, Ontario
K1A 0P9

Regional offices: Abbotsford, Saskatoon, Kingston, Laval, Moncton.

District offices: throughout Canada.

Information: Ottawa/Hull (613) 992-8420.

The Correctional Service of Canada, as part of the criminal justice system, has as its mission to contribute to the protection of society by exercising safe, secure and humane control of offenders while helping them become law-abiding citizens. It provides programs for offenders from pre-admission until the expiration of their sentence. It operates on the basis that the offender must be viewed from physical, emotional and cultural aspects.

Defence Construction (1951) Limited

Head office
Sir Charles Tupper Building
3rd Floor, A Wing
Riverside Drive
Ottawa, Ontario
K1A 0K3

Regional offices: Victoria, Winnipeg, Toronto, Montreal (Longueuil), Halifax.

Site offices: on various Canadian Forces bases across the country.

Information: Ottawa/Hull (613) 998-9539.

The corporation is the contracting and supervisory agency for the major military construction and maintenance projects required by the Department of National Defence. Its principal functions are to obtain tenders, make recommendations on proposed awards, and to award and administer contracts.

Department of Finance Canada

L'Esplanade Laurier, East Tower
140 O'Connor Street
Ottawa, Ontario
K1A 0G5

Information: Ottawa/Hull (613) 992-1574; Telecommunications Device for the Deaf (TDD) (613) 996-0035.

The Department of Finance is responsible for advice to the federal government on the economic and financial affairs of Canada. It oversees all government initiatives affecting the economy and monitors external factors that may bear on domestic economic performance. The department's most visible output is the federal budget. The Minister of Finance's Budget speech reviews the government's accounts and presents fiscal projections for the coming years including expenditures, revenues, tax changes and debt levels. In addition, the minister is responsible for the management of the Consolidated Revenue Fund.

Department of Justice Canada

Head office
Justice Building
239 Wellington Street
Ottawa, Ontario
K1A 0H8

Regional offices: Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax.

Information: Ottawa/Hull (613) 957-4222.

The department supervises all legal matters under federal responsibility. It also acts as legal advisor to the Governor General and advises upon legislative acts.

Economic Council of Canada

320 Queen Street
Tower A, 18th Floor
Ottawa, Ontario
(Mail: PO Box 527, Station B
Ottawa, Ontario K1P 5V6)

Information: Ottawa/Hull (613) 952-1711.

The Council is an independent, advisory body that prepares and publishes an annual review of the country's economic problems and medium-term prospects. It also conducts economic studies on its own initiative or at the request of the government. The results of its research are available to the public in the form of published reports and authored research studies.

Elections Canada

440 Coventry Road
Ottawa, Ontario
K1A 0M6

Information: Ottawa/Hull (613) 993-2975 or toll-free 1-800-267-VOTE.

The Chief Electoral Officer of Canada is responsible for the supervision of the administrative conduct of federal elections in Canada and for ensuring that all provisions of the Canada Elections Act are complied with. Major activities include the training of returning officers, the revision of polling division boundaries, the acquisition of election material and supplies, the maintenance of a registry of political parties and the certification of statutory payments to be made to auditors, political parties and candidates under the election expenses provisions of the Act.

Pursuant to the Electoral Boundaries Readjustment Act and following each decennial Census, the Chief Electoral Officer must calculate the number of electoral districts to be assigned to each province according to rules contained in Section 51 of the Constitution Act, and prepare population distribution maps for use by electoral boundaries commissions that are directly responsible for readjusting federal electoral district boundaries.

Emergency Preparedness Canada

Head office
Jackson Building, 2nd Floor
122 Bank Street
Ottawa, Ontario
K1A 0W6

Regional offices: provincial capitals.

Information: Ottawa/Hull (613) 991-7077.

Emergency Preparedness Canada is the federal agency responsible for co-ordinating the emergency planning and response of the Government of Canada for peacetime and wartime emergency situations.

Employment and Immigration Canada

Head office
Place du Portage, Phase IV
Level 0
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0J9)

Regional offices: Vancouver, Edmonton, Regina, Winnipeg, Toronto (Willowdale), Montreal, Fredericton, Dartmouth, Charlottetown, St. John's.

Canada employment centres: throughout Canada.

Canada immigration centres: 107 throughout Canada.

Agricultural employment services offices: 68 throughout Canada.

Information: Ottawa/Hull (819) 994-6313.

The department is responsible for the legislative review of, and amendments to, the legislation it administers; special applications of the legislation, such as adjudication principles, labour conflicts, work-sharing agreements and job creation projects; adjustments to Unemployment Insurance (UI) premium rates; budgets affecting the UI fund, appeals concerning UI premium reduction, and interprovincial and international agreements.

Energy, Mines and Resources Canada

Head office
580 Booth Street
Ottawa, Ontario
K1A 0E4

Regional information offices: Vancouver, Calgary, Saskatoon, Winnipeg, Toronto, Montreal, Moncton (Dieppe), Halifax, St. John's.

Surveys and Mapping and Remote Sensing Sector, regional offices: Whitehorse, Yellowknife, Vancouver, Edmonton, Regina, Winnipeg, Toronto, Sherbrooke, Amherst.

Information: Ottawa/Hull (613) 995-3065.

The objective of the Department of Energy, Mines and Resources is to promote the discovery, development and efficient use of the country's mineral and energy resources and to broaden the public's knowledge of Canada's landmass for the benefit of all Canadians. The department comprises three programs: Energy, Minerals and Earth Sciences, and Administration. Through these programs it fosters national policies based on research and data collection, provides initiatives directed toward national economic development and makes available scientific and technical information to a wide range of customers across the country.

Environment Canada

Headquarters
Les Terrasses de la Chaudière
27th Floor
10 Wellington Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0H3)

Regional offices: across Canada.

Other offices (including weather offices and national parks): throughout Canada.

Information: Ottawa/Hull (819) 997-2800.

The primary objective of the Department of the Environment is to preserve and enhance the quality of the environment for the benefit of present and future generations of Canadians. Departmental programs are designed to promote the establishment or adoption of objectives and standards relating either to environmental quality or pollution control, ensure the wise management and use of renewable resources and to provide Canadians with environmental information in the public interest. As well, the department ensures that new federal projects, programs and activities are assessed early in the planning process for potentially adverse effects on the environment and ensures the preservation of nationally significant natural and cultural heritages.

Export Development Corporation

Head office
151 O'Connor Street
PO Box 655
Ottawa, Ontario
K1P 5T9

Regional offices: Vancouver, Calgary, Toronto, Montreal, Halifax.

District offices: Winnipeg, Ottawa, London.

Information: Ottawa/Hull (613) 598-2500.

The Export Development Corporation (EDC) is Canada's official export credit agency, responsible for providing export credit insurance, loans, guarantees and other financial services to promote Canadian export trade. It also arranges credit for foreign buyers in order to facilitate and develop export trade.

External Affairs and International Trade Canada

Head office
Lester B. Pearson Building
125 Sussex Drive
Ottawa, Ontario
K1A 0G2

Passport offices: throughout Canada.

Information: Ottawa/Hull, general information (includes evenings, weekends and holidays) (613) 996-9134; foreign policy (613) 996-3709; Visual Ear (613) 994-3560; for passport information (613) 994-3500 or contact your nearest regional passport office.

The Department of External Affairs and International Trade Canada has the primary responsibility for the promotion and protection of Canada's interests abroad and the conduct of Canada's relations with other countries. Its main functions are: to ensure the effective representation of Canada in other countries and in international organizations, including close contact, communication and negotiation with other governments and organizations through Canada's extensive network of representatives abroad; to evaluate information about political, economic and other developments likely to affect Canada's interests; to give advice to the government, often in consultation with other departments, on the formulation and implementation of policies and programs with international dimensions; to ensure the co-ordination of the external aspects and application of national policies for export trade promotion, defence and security, development assistance, immigration, and cultural and scientific exchanges; to reflect to peoples abroad the bilingual and multicultural character of Canadian society; and to provide protection and assistance to Canadian citizens abroad.

Farm Credit Corporation Canada

Head office
434 Queen Street
PO Box 2314, Postal Station D
Ottawa, Ontario
K1P 6J9

Regional offices: Kelowna, Edmonton, Regina, Winnipeg, Guelph, Quebec (Ste-Foy), Moncton.

Field offices: throughout Canada.

Information: Ottawa/Hull (613) 996-6606.

The Corporation makes and administers farm loans under the authority of the Farm Credit Act and the Farm Syndicates Credit Act to enable Canadian farmers to establish, develop and maintain viable farm enterprises. As well, it administers programs as directed by the federal government and provides counselling and assistance in the planning, organization and development of farm businesses to all applicants and borrowers.

Federal Business Development Bank

Head office
800 Place Victoria
PO Box 335
Montreal, Quebec
H4Z 1L4

Regional offices: Vancouver, Winnipeg, Toronto, Montreal, Halifax.

Branch offices: throughout Canada.

CASE (Counselling Assistance to Small Enterprises) offices: throughout Canada.

Information: Montreal (514) 283-5904.

The Federal Business Development Bank is a Crown corporation that assists in the establishment and development of business enterprises in Canada by providing them with financial and management services.

Fisheries and Oceans

Head office
Centennial Towers
200 Kent Street
Ottawa, Ontario
K1A 0E6

Regional head offices: Vancouver, Winnipeg, Mont Joli, Moncton, Halifax, St. John's.

District offices: throughout Canada.

Information: Ottawa/Hull (613) 993-0600.

The Department of Fisheries and Oceans is responsible for a wide range of fisheries activities, including fisheries management and research in coastal and inland waters, fisheries economic development, international fisheries negotiations, oceanographic research, hydrographic surveying and charting, and the development and administration of fishing and recreational harbours.

Foreign Claims Commission

Lester B. Pearson Building
125 Sussex Drive
Ottawa, Ontario
K1N 8V5

Information: Ottawa/Hull (613) 995-2064.

The Foreign Claims Commission deals with claims against foreign countries with which Canada has agreements or is in the process of negotiating agreements, for compensation to Canadians whose property has been nationalized or otherwise taken without compensation. When such an agreement has been concluded, the Commission makes recommendations to the Secretary of State for External Affairs and the Minister of Finance on the eligibility of individual claimants for compensation and on amounts of compensation to be awarded.

Forestry Canada

Place Vincent Massey
351 Saint-Joseph Boulevard
Hull, Quebec
(Mail: Ottawa, Ontario K1A 1G5)

Regional offices: Victoria, Edmonton, Sault Ste Marie, Chalk River, Val D'Or, Rimouski, Fredericton, St. John's.

Information: Ottawa/Hull (819) 997-1107.
Hearing Impaired 953-8691.

In recognition of forestry's importance to the Canadian economy and environment and of the need to more coherently co-ordinate the federal government's impact on and contribution to the sector, a separate Department of Forestry (previously called the Canadian Forestry Service) was established by the Department of Forestry Act in 1989. In a landmark step, which acknowledges the close relationship between the economic and environmental aspects of forestry, the principle of sustainable development has been incorporated into the legislation. Forestry Canada's mandate is to promote and enhance the sustained economic utilization of Canada's forest resource through environmentally sound forest management, and to enhance the social and economic benefits derived from publicly- and privately-owned forests and from forest-related activities in Canada.

Health and Welfare Canada

Head office
Brooke Claxton Building
de la Colombine Boulevard
Tunney's Pasture
Ottawa, Ontario
K1A 0K9

Regional offices: throughout Canada.

District offices: throughout Canada.

Information: Ottawa/Hull (613) 957-2991.

The department is responsible for matters relating to the promotion and preservation of the health, social security and social welfare of Canadians. Its activities include investigation and research into public health and welfare; medical assessment and care of immigrants and seamen; supervision of the public health facilities of rail, water and other types of transportation; and supervision of such income programs as the Canada Pension Plan, Family Allowances and Old Age Security. The department's mandate also includes the Fitness and Amateur Sport Program, which is designed to promote, encourage and develop fitness and amateur sport in Canada.

Immigration and Refugee Board of Canada

Head office
240 Bank Street
Ottawa, Ontario
K1A 0K1

Regional offices: Vancouver, Calgary, Winnipeg, Toronto, Montreal.

Information: Ottawa/Hull (613) 995-6486.

Appeals are provided to persons who have been ordered removed from Canada or to persons in Canada whose relatives have been refused admission to Canada. The Board makes available an independent court to which they may appeal such decisions, not only on legal grounds, but also on equitable grounds. Claims to refugee status are adjudicated fairly and quickly so as to afford protection to genuine refugees while discouraging abuse of Canada's humanitarian tradition.

Indian and Northern Affairs Canada

Head office
Les Terrasses de la Chaudiere
North Tower
10 Wellington Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0H4)

Regional offices: Whitehorse, Yellowknife, Vancouver, Edmonton, Regina, Winnipeg, Toronto, Quebec, Amherst.

Information: Ottawa/Hull, general inquiries (819) 997-0811.

The department has a number of interlocking responsibilities and objectives: to initiate, encourage and support measures that will respond to the needs and aspirations of Indian and Inuit peoples, and that will improve their social, cultural and economic well-being; to encourage the orderly economic and political development of the Yukon and Northwest Territories, and to co-ordinate all federal activities in the two territories; to ensure that lawful obligations to Indian people are met and to settle native claims relating to traditional native use and occupancy of land in those areas of Canada where this traditional use has not been extinguished by treaty or superseded by law. Increasingly, though, the department is devolving its powers and responsibilities to the native peoples and territorial governments directly concerned.

Industry, Science and Technology Canada

Head office
C.D. Howe Building
235 Queen Street
Ottawa, Ontario
K1A 0H5

Regional offices: Whitehorse, Yellowknife, Vancouver, Edmonton, Saskatoon, Winnipeg, Toronto, Montreal, Moncton, Halifax, Charlottetown, St. John's.

Local offices: throughout Canada.

Information: Ottawa/Hull (613) 995-8900.

The mandate of Industry, Science and Technology Canada (ISTC) is to act in full partnership with the private sector, the science community and other levels of government to promote international competitiveness and industrial excellence in Canada; to renew and rebuild our scientific, technological, managerial and production base; and to bring together in a concerted way the talents required to guarantee Canada's place in the front rank of industrial nations. The focus of ISTC policy development, program and service delivery, and its advocacy role inside and outside government can be summed up as building competitiveness.

Information and Privacy Commissioners of Canada (Offices of the)

Place de Ville
Tower B
112 Kent Street, 3rd Floor
Ottawa, Ontario
K1A 1H3

Information: Ottawa/Hull (613) 995-2410.

The Information Commissioner is appointed by Parliament to deal with complaints from individuals who allege that the government has failed to comply with rights contained in the Access to Information Act. The Information Commissioner may appear on behalf of complainants, with their consent or as a party, in applications before the Federal Court for review of decisions of government institutions to refuse access under the Act. In addition to annual reports, the Information Commissioner may make special reports to Parliament at any time.

The Privacy Commissioner is appointed by Parliament to investigate complaints by individuals who allege that the federal government has failed to comply with their rights to personal information as outlined in the Privacy Act.

International Centre for Ocean Development

5670 Spring Garden Road, 9th Floor
Halifax, Nova Scotia
B3J 1H6

Other office: Ottawa.

Information: Halifax (902) 426-1512; Ottawa (613) 954-1920.

Management of ocean resources: this Crown corporation was established in 1985 in the wake of the 1982 United Nations Conference on the Law of the Sea, which introduced a global plan for the sharing of the world's ocean resources. ICOD's mission is to co-operate with and support developing countries in the management of their ocean resources. Its objectives are to support improved and innovative approaches to the use of ocean resources by developing countries; to foster the development of Canadian expertise in ocean-use management and to make this available to developing countries; to provide training programs, technical assistance and advisory services; to develop and distribute information; and, to a limited extent, to sponsor research consistent with ICOD's mandate. Many Canadian training and research centres already have strong links with foreign institutions and international development projects. ICOD's initiatives are meant to complement their work and the work of other national and international organizations involved in ocean development, and not to be a competitive venture.

International Development Research Centre

250 Albert Street
PO Box 8500
Ottawa, Ontario
K1G 3H9

Other offices: Bogota, Cairo, Dakar, Nairobi, New Delhi, Singapore.

Information: Ottawa/Hull (613) 598-0569.

The objectives of the Centre are to stimulate and financially support research for the benefit of developing countries.

International Joint Commission

Canadian Section
Berger Building, 18th Floor
100 Metcalfe Street
Ottawa, Ontario
K1P 5M1

Regional office: Windsor.

Information: Ottawa/Hull (613) 995-2984.

The International Joint Commission (IJC), consisting of three Canadian and three United States commissioners, was established under the 1909 Boundary Waters Treaty to assist in the solution and prevention of disputes on questions arising along the common frontier of Canada and the United States. Among the Commission's duties is the quasi-judicial responsibility for adjudicating applications for construction and operation of works that would affect water levels and flows on boundary and transboundary waters. The Commission also investigates problems referred to it by the two governments, including water quality issues, particularly those relating to the 1978 Great Lakes Water Quality Agreement. The IJC also has a mandate to alert both governments of air quality problems in boundary areas.

Under the 1978 Great Lakes Water Quality Agreement, the Commission has certain monitoring responsibilities relating to municipal waste treatment works. It also monitors municipal treatment works in the Red, Rainy and St. Croix rivers.

Investment Canada

240 Sparks Street
PO Box 2800, Station D
Ottawa, Ontario
K1P 6A5

Information: Ottawa/Hull (613) 995-0465; concerning investment services, toll-free 1-800-267-0490.

The agency encourages and facilitates investment in Canada by Canadians and non-Canadians by offering information and other investment services, in collaboration with other departments and agencies of the federal and provincial governments and with the private sector in Canada and abroad. The agency also provides advice and assistance to the minister responsible for Investment Canada concerning investment proposals that are subject to review under the Investment Canada Act.

Labour Canada

Headquarters
Place du Portage
165 Hotel de Ville Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0J2)

Regional offices: Vancouver, Winnipeg, Toronto (Willowdale), Ottawa, Montreal, Moncton.

District offices: throughout Canada.

Federal Mediation and Conciliation Service field offices: Vancouver, Winnipeg, Toronto, Montreal, Halifax, St. John's.

Information: Ottawa/Hull (819) 997-2617.

The department's aims are to promote stable industrial relations by maintaining a balanced legislative framework for industrial relations in the federal jurisdiction; by providing assistance to parties in overcoming industrial relations problems; by establishing appropriate standards of wages, conditions of employment, and occupational safety and health; by providing non-legislative programs designed to achieve understanding and co-operation in the industrial relations sphere; and by maintaining and strengthening the Canadian contribution to the improvement of labour conditions throughout the world.

Law Reform Commission of Canada

Head office
Varette Building, 7th Floor
130 Albert Street
Ottawa, Ontario
K1A 0L6

Regional office: Montreal.

Information: Ottawa/Hull (613) 996-7844.

The Commission carries out research in the areas of criminal law, criminal procedure, administrative law, protection of life and legislative drafting.

Library of Parliament

Parliament Buildings
Wellington Street
Ottawa, Ontario
K1A 0A9

Information: Ottawa/Hull (613) 995-1166.

The Library makes available to parliamentarians a large collection of resources as well as expert professional staff to support their information and research needs.

Medical Research Council of Canada

Jeanne Mance Building, 20th Floor
Tunney's Pasture
Ottawa, Ontario
K1A 0W9

Information: Ottawa/Hull (613) 954-1812.

According to the Medical Research Council Act, the Council's mandate is to promote and support health sciences research in Canada by funding research carried out primarily in faculties of medicine, dentistry, and pharmacy, as well as in affiliated institutions and hospitals.

National Archives of Canada

Head office
395 Wellington Street
Ottawa, Ontario
K1A 0N3

Federal records centres: Vancouver (Burnaby), Edmonton, Winnipeg, Toronto (Etobicoke), Ottawa, Montreal, Halifax.

Laurier House (historical museum): Ottawa.

Information: Ottawa/Hull (613) 995-5138.

The National Archives of Canada provides three basic services: collecting and preserving public (federal) and private historical records of national importance; organizing, managing, preserving or disposing of the current records of government institutions at the request of Treasury Board; and providing assistance to the archival community. This broad mandate obliges the National Archives to preserve material both from the private sector and federal government institutions.

National Arts Centre

53 Elgin Street
PO Box 1534, Station B
Ottawa, Ontario
K1P 5W1

Information: Ottawa/Hull (613) 996-5051.

The National Arts Centre Corporation is responsible for the operation of the National Arts Centre in Ottawa and the development of the performing arts in the National Capital Region. The NAC also assists the Canada Council in developing the performing arts throughout Canada.

National Capital Commission

Head office
161 Laurier Avenue West
Ottawa, Ontario
K1P 6J6

Visitor centres: Ottawa, Hull, Old Chelsea (Gatineau Park), Sainte-Cécile-de-Masham (seasonal office). The NCC also manages an Info-tent on Parliament Hill from June to August inclusive, and satellite centres at the Ottawa bus and train terminals in July and August.

Information: (613) 239-5198.

The NCC's purpose is to enhance the role of the national capital in the lives of all Canadians by making it a national meeting place and a focus for the nation's diverse cultural life.

National Defence

Head office
101 Colonel By Drive
Ottawa, Ontario
K1A 0K2

Information: Ottawa/Hull (613) 995-4581 or 996-2353 (media calls).

The department controls and manages the Canadian Armed Forces and all matters relating to national defence, including civil defence. It is responsible for the construction and maintenance of all defence establishments and facilities required for the defence of Canada.

National Energy Board

Head office
Trebla Building
473 Albert Street
Ottawa, Ontario
K1A 0E5

Reserves office: Calgary.

Information: Ottawa/Hull (613) 990-3448.

The Board regulates specific areas of the oil, gas and electrical industries in the public interest, and advises the government on matters relating to the development and use of energy resources.

National Farm Products Marketing Council

Martel Building, 13th Floor
270 Albert Street
PO Box 3430, Station D
Ottawa, Ontario
K1P 6L4

Information: Ottawa/Hull (613) 995-2297.

The Council advises the Minister of Agriculture on the establishment and operation of national agricultural marketing agencies, and works with these agencies and provincial governments in promoting more effective marketing of farm products. Chicken, egg and turkey marketing agencies have already been established.

National Film Board

Operational headquarters
3155 Côte de Liesse Road
Saint-Laurent, Quebec
(Mail: PO Box 6100, Station A,
Montreal, Quebec H3C 3H5)

Distribution Centre
150 Kent Street
Ottawa, Ontario
K1A 0M9

Regional distribution offices: Vancouver, Edmonton, Winnipeg, Toronto, Ottawa, Montreal, Halifax.

Other offices: throughout Canada.

Offices abroad: New York, London, Paris.

Information: Ottawa/Hull (613) 992-3615; Montreal (514) 283-9253 (Communications).

The Board's mandate is to produce and distribute, and to promote the production and distribution of Canadian films and videos.

The Board is a totally integrated production and distribution house. A large proportion of its films are made by freelance independent filmmakers. The average annual production is approximately 100 original films and 50 versions and adaptations of existing films. The Board produces versions of its films in several languages for foreign distribution. It also produces IMAX films. The Board undertakes advanced technical research and development to advance the art and technology of film and video, and plays an active role in training people in all aspects of filmmaking.

National Gallery of Canada

380 Sussex Drive
PO Box 427, Station A
Ottawa, Ontario
K1N 9N4

Information: Ottawa/Hull (613) 990-1985.

The corporate objects of the National Gallery of Canada are to develop, maintain and make known, throughout Canada and internationally, a collection of works of art, both historic and contemporary, with special but not exclusive reference to Canada, and to further knowledge, understanding and enjoyment of art in general among all Canadians.

National Library of Canada

395 Wellington Street
Ottawa, Ontario
K1A 0N4

Information: Ottawa/Hull (613) 995-9481.

The National Library's mandate is to promote the development of library and information resources and services and to facilitate their access; to ensure acquisition, preservation and access concerning the public heritage of Canada; and to support Canadian studies for the benefit of all Canadians.

National Museum of Science and Technology

1867 St-Laurent Boulevard
Box 9724
Ottawa, Ontario
K1G 5A3

Information: Ottawa/Hull (613) 991-3044.

The corporation fosters scientific and technological literacy throughout Canada by establishing and maintaining a collection of scientific and technological objects, with special but not exclusive reference to Canada, and by demonstrating the products and processes of science and technology and their economic, social and cultural relationships with society. It consists of three interpretive centres: the National Museum of Science and Technology, the National Aviation Museum and the Agriculture Museum. The corporation is reponsible for the design, fabrication and maintenance of permanent, special and travelling exhibitions and public and educational programming including publications and the co-ordinator of volunteers. The corporation also collects, maintains, preserves, restores and documents its collection of scientific and technological objects and other museum material.

National Parole Board

Headquarters
Sir Wilfrid Laurier Building
340 Laurier Avenue West
Ottawa, Ontario
K1A 0R1

Regional offices: Vancouver (Abbotsford), Saskatoon, Kingston, Montreal, Moncton.

Information: Ottawa/Hull (613) 954-6617.

The National Parole Board is responsible for granting, denying or revoking parole for inmates of all federal institutions, and inmates of provincial institutions in the Prairie and Atlantic provinces. It may also revoke mandatory supervision of federal inmates. The Board's work includes establishing eligibility criteria for conditional release, conditions of release, implementation of procedural safeguards, pardon recommendations, and communication and consultation with other components of the criminal justice system.

National Research Council Canada

Head office
Montreal Road
Ottawa, Ontario
K1A 0R6

Other offices: throughout Canada.

Information: Ottawa/Hull (613) 993-9101.

Operating under the National Research Council Act, the National Research Council of Canada (NRC), as the principal research agency of the federal government, carries out a wide spectrum of activities, which includes the performance of scientific and engineering research in response to national, economic and social needs; the provision of direct financial and technical assistance to industry; the establishment and maintenance of standards; the provision of national scientific and technological facilities for industry and the universities; and the operation of a nationwide network of scientific and technical information services.

National Transportation Agency of Canada

Head office
Les Terrasses de la Chaudière
Room 1910
15 Eddy Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0N9)

Western division headquarters: Saskatoon.

Regional offices: Whitehorse, Vancouver, Calgary, Winnipeg, Thunder Bay, Toronto, Montreal, Moncton.

Information: Ottawa/Hull (819) 997-6567; Saskatoon (306) 975-5201.

The object of the National Transportation Act is to encourage a safe, economic, efficient and adequate transportation system to serve the needs of shippers and travellers. The National Transportation Agency (NTA) is responsible for the economic regulation of all aspects of the transportation sector in Canada under federal jurisdiction, including transport by rail, air, water and commodity pipeline, as well as certain types of interprovincial commercial motor transport. The NTA also regulates railway safety. The Agency has all the powers, rights and privileges of a superior court in Canada. Although NTA decisions are binding, the Agency may review, rescind or vary any decision or order upon application for review under Section 41 of the Act. On matters of a question of law or jurisdiction, decisions or orders may be appealed to the Federal Court or by petition to the Governor-in-Council.

Natural Sciences and Engineering Research Council of Canada

200 Kent Street
Ottawa, Ontario
K1A 1H5

Information: Ottawa/Hull (613) 995-5992.

The Natural Sciences and Engineering Research Council is a federal agency that supports advanced research and development in the natural sciences and engineering at Canadian universities and encourages collaboration between the academic and industrial sectors.

Northern Pipeline Agency Canada

Lester B. Pearson Building
125 Sussex Drive
Ottawa, Ontario
K1A 0G2

Information: Ottawa/Hull (613) 993-7466.

The Agency was established to oversee the planning and construction, by Foothills Pipe Lines (Yukon) Ltd., of the Alaska Highway gas pipeline from the Alaska–Yukon border to the lower 48 states, so as to maximize economic benefits and minimize adverse effects on people and the environment along the route.

Northwest Territories Water Board

Precambrian Building, 9th Floor
(PO Box 1500)
Yellowknife, NWT
X1A 2R3

Information: Yellowknife (403) 920-8191.

The Board provides for the conservation, development and use of the water resources of the Northwest Territories in a manner that will provide the optimum benefit for all Canadians, and for the residents of the Territories in particular. Under the Act, an application must be made to the Board, and a licence issued, prior to the use of any waters of disposal of any water-borne waste. The requirement for application applies equally to departments and agencies of the federal government. The only exclusions are the use of water for domestic purposes, for extinguishing a fire, or on an emergency basis, for controlling or preventing a flood, and exempted uses under the regulations.

Official Languages (Office of the Commissioner of)

Head office
110 O'Connor Street
Ottawa, Ontario
K1A 0T8

Regional offices: Edmonton, Winnipeg, Sudbury, Montreal, Moncton.

Information: Ottawa/Hull (613) 992-5264.

The Commissioner of Official Languages ensures that Canada's two official languages, English and French, enjoy equality of status and equal rights and privileges in all federal institutions.

Pension Appeals Board

PO Box 8567
Postal Terminal
Ottawa, Ontario
K1G 3H9

Information: Ottawa/Hull (613) 995-0612.

The Pension Appeals Board, established under the Canada Pension Plan Act, hears appeals under the Canada Pension Plan and under certain provincial pension plans. The Board consists of judges of the Federal Court or of a superior, district or county court of a province.

Privatization and Regulatory Affairs (Office of)

Heritage Place
155 Queen Street
6th Floor
Ottawa, Ontario
K1A 1J2

Information: Ottawa/Hull (613) 957-4372.

The Office of Privatization and Regulatory Affairs has two main objectives; the divestiture of selected Crown corporations and the improved management of the regulatory process.

Public Service Commission

Head office
L'Esplanade Laurier, West Tower
300 Laurier Avenue West
Ottawa, Ontario
K1A 0M7

Regional and district offices: Whitehorse, Yellowknife, Vancouver, Edmonton, Regina, Winnipeg, Toronto, Ottawa, Montreal, Quebec (Sillery), Moncton, Halifax, Charlottetown, St. John's.

Information: Ottawa/Hull (613) 996-8436.

The Public Service Commission (PSC) is a politically independent agency accountable to Parliament for the administration of the Public Service Employment Act. Under the terms of this Act, the Commission must ensure that the merit principle, as determined by the Commission, is upheld in all public service staffing operations. The objective of the Commission is to assist in the maintenance of a competent public service by ensuring that the best qualified persons are recruited to or promoted within the public service, that qualified employees are deployed to meet operational requirements and that certain training services are provided on behalf of the Treasury Board.

Public Service Staff Relations Board

C.D. Howe Building
West Tower, 6th Floor
240 Sparks Street
PO Box 1525, Station B
Ottawa, Ontario
K1P 5V2

Information: Ottawa/Hull (613) 990-1800

The Board administers the Public Service Staff Relations Act, which governs collective bargaining, the grievance process, and the adjudication procedure for the federal public service.

Public Works Canada

Head office
Sir Charles Tupper Building
Confederation Heights
Ottawa, Ontario
K1A 0M2

Regional offices: Vancouver, Edmonton, Toronto (Willowdale), Hull, Montreal, Halifax

Field offices: throughout Canada.

Information: Ottawa/Hull (613) 997-7525.

Public Works Canada attends to the government's office and other real property needs, offers expert advice and services in the management, operation and disposal of federal real property at market-based rates, while contributing to the government's social, economic and environmental objectives.

Revenue Canada, Customs and Excise

Head office
Connaught Building
Mackenzie Avenue
Ottawa, Ontario
K1A 0L5

Regional offices: (Customs) Vancouver, Calgary, Winnipeg, Windsor, Hamilton, Toronto, Ottawa, Montreal, Quebec, Halifax; (Excise) Vancouver, Calgary, Winnipeg, London, Toronto, Ottawa, Montreal, Quebec, Halifax.

Other offices, including district and customs offices: throughout Canada.

Information: Ottawa/Hull (613) 957-0275.

Customs and Excise is responsible for assessing and collecting duties and taxes on imported and domestically produced goods, as well as on the transportation of persons by air. It controls the international movement of persons and goods, and provides Canadian industry with the protection to which it is entitled under the customs laws. The Customs Act, the Customs Tariff, the Special Import Measures Act, the Excise Act and the Excise Tax Act are administered by Customs and Excise, as are statutes of other government departments and agencies that relate to the international movement of persons and goods

Revenue Canada Taxation

Head office
875 Heron Road
Ottawa, Ontario
K1A 0L8

District offices: all provincial capitals (except Fredericton) as well as Vancouver, Penticton, Calgary, Saskatoon, Thunder Bay, Sudbury, Hamilton, Windsor, London, Kitchener, St. Catharines, Mississauga, Scarborough, Belleville (with sub-office in Kingston), Ottawa, Rouyn, Laval, Montreal, Saint-Hubert, Sherbrooke, Quebec district office sub-offices in Chicoutimi, Rimouski and Trois-Rivières, Saint John (with a sub-office in Bathurst), Sydney.

Information: any district taxation office.

Revenue Canada Taxation administers the government's tax policy, which is initiated by the Department of Finance. It assesses and collects individual and corporate income taxes under the Income Tax Act of Canada. Individual income tax is collected for all provinces except Quebec, and corporate tax is collected for all provinces except Quebec, Ontario and Alberta. The department also collects Canada Pension Plan contributions and unemployment insurance premiums.

Royal Canadian Mint

Head office
320 Sussex Drive
Ottawa, Ontario
K1A 0G8

Regional offices: Winnipeg, Ottawa.

Information: Ottawa/Hull (613) 993-3500.

The Mint is authorized to produce and supply Canadian coins, including circulating, collector and bullion coinage. The Mint also produces medals, medallions, tokens, trade dollars, plaques and badges and is authorized to melt, assay and refine gold. It accepts contracts to mint coinage for other countries as well.

Royal Canadian Mounted Police

Head office
Headquarters Building
1200 Vanier Parkway
Ottawa, Ontario
K1A 0R2

Local offices and detachments: throughout Canada.

Information: Ottawa/Hull (613) 993-7267.

As the federal police force, the RCMP is responsible for the prevention and detection of offences committed against federal statutes and for the provision of investigative and protective services to federal departments and agencies.

The Saint Lawrence Seaway Authority

Head office
Suite 1400
Constitution Square,
360 Albert Street
Ottawa, Ontario
K1R 7X7

Regional offices: Cornwall, St. Catharines, Montreal (Saint-Lambert).

Information: Ottawa/Hull (613) 598-4600.

The Authority was incorporated for the purposes of constructing, operating and maintaining, either on its own in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie; constructing, operating and maintaining alone or jointly or in conjunction with an appropriate authority in the United States, bridges connecting Canada with the United States; acquiring shares or property of any bridge company; and operating and managing bridges.

Science Council of Canada

Berger Building, 17th Floor
100 Metcalfe Street
Ottawa, Ontario
K1P 5M1

Information: Ottawa/Hull (613) 996-1729.

The Council's major responsibilities are to analyze science and technology policy issues; recommend policy direction to government; keep the public informed about the impact of science and technology in Canada; and stimulate discussion of science and technology policy among governments, industry and academic institutions. The Council operates at "arm's length" from government, designing its own program of research and publishing its findings at its own discretion.

Secretary of State

Head office
Jules Leger Building
15 Eddy Street
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0M5)

Regional offices: Vancouver, Edmonton, Regina, Winnipeg, Toronto, Montreal, Moncton, Halifax, St. John's.

Local offices and courts of Canadian citizenship: throughout Canada.

Information: Ottawa/Hull (819) 997-0055.

The Secretary of State supports youth and multiculturalism and encourages the use of the two official languages. It has a central responsibility for the Canadian government's domestic human rights interests, and is responsible for the administration of the Citizenship Act and for organizing and managing ceremonial and special occasions.

Social Sciences and Humanities Research Council of Canada

255 Albert Street
PO Box 1610
Ottawa, Ontario
K1P 6G4

Information: Ottawa/Hull (613) 992-0691.

The Council's objective is to promote and assist research and scholarship in the social sciences and humanities.

Solicitor General Canada

Central office
Sir Wilfrid Laurier Building
340 Laurier Avenue West
Ottawa, Ontario
K1A 0P8

Regional offices: Vancouver, Edmonton, Saskatoon, Toronto, Montreal, Moncton.

Information: Ottawa/Hull (613) 991-3283.

The Ministry of the Solicitor General brings the major federal operational elements concerned with the administration of the criminal justice system under the direction and supervision of the Solicitor General. He/she is responsible for internal security, law enforcement, penitentiaries, paroles and remissions, and has jurisdiction over Correctional Service Canada, the National Parole Board, the RCMP and the Canadian Security Intelligence Service.

Standards Council of Canada

Head office
350 Sparks Street, Suite 1200
Ottawa, Ontario
K1P 6N7

Information: Ottawa/Hull (613) 238-3222.

The Council promotes voluntary standardization in fields relating to the construction, manufacture, production, quality, performance and safety of buildings, structures, manufactured articles, products and other goods not expressly provided for by law.

Statistics Canada

Head office
R.H. Coats Building
Tunney's Pasture
Ottawa, Ontario
K1A 0T6

Regional offices: Vancouver, Calgary, Edmonton, Regina, Winnipeg, Toronto, Sturgeon Falls, Montreal, Halifax, St. John's.

Information: Ottawa/Hull (613) 990-8116.

As Canada's central statistical agency, Statistics Canada collects, processes, analyzes and disseminates data on virtually every aspect of the nation's society and economy, and provides inquiry and consultation services to statistical users. In addition, the agency co-operates in the statistical activities of other federal and provincial departments and fulfils a range of international statistical commitments.

Status of Women Canada

151 Sparks Street, Room 1005
Ottawa, Ontario
K1A 1C3

Information: Ottawa/Hull (613) 995-7835.

Status of Women activities in the federal government: this office monitors federal department policies and programs to promote equality between the sexes, co-ordinates measures at the federal level to improve the status of women, and ensures federal-provincial and non-governmental consultation on status of women questions.

Superintendent of Financial Institutions Canada (Office of the)

Head office
255 Albert Street
Ottawa, Ontario
K1A 0H2

Regional offices: Vancouver, Winnipeg, Toronto, Montreal.

Information: Ottawa/Hull (613) 990-7788.

The Superintendent of Financial Institutions is responsible for regulating and supervising banks, insurance, trust, loan and investment companies, and co- operative credit associations that are chartered, licensed or registered by the federal government, and for supervising federally regulated pension plans. The Office of the Superintendent also has a responsibility to provide actuarial reports on various government pension programs.

Supply and Services Canada

Head office
Place du Portage
Phase III
Hull, Quebec
(Mail: Ottawa, Ontario K1A 0H2)

Regional offices: Vancouver, Winnipeg, Calgary, Toronto (Mississauga), Ottawa, Montreal, Quebec, Halifax.

Information:Ottawa/Hull (819) 997-6363.

Supply and Services Canada is the chief purchasing agent and central accountant for the Government of Canada.

Telefilm Canada

Head office
National Bank of Canada Tower, 14th Floor
600 de la Gauchetière Street West
Montreal, Quebec
H3B 4L2

Regional offices: Vancouver, Toronto, Halifax, Los Angeles (US), Paris (France), London (England).

Information: Montreal (514) 283-6363.

Telefilm Canada, formerly known as the Canadian Film Development Corporation, is charged with fostering the growth and development of the private sector of the Canadian film industry. It does not produce or distribute programming itself, but finances the production and commercial distribution of feature films and television programs produced by Canadian companies. Telefilm Canada is headed by a board of directors and a chairman appointed by the Governor-in-Council, and is financed by a yearly appropriation from Parliament.

Transport Canada

Head office
Transport Canada Building
Place de Ville
Tower C
330 Sparks Street
Ottawa, Ontario
K1A 0N5

Information: Ottawa/Hull (613) 990-2309.

The department is responsible for the development and operation of a safe and efficient national transportation system that contributes to the achievement of general government objectives, and operates specific elements of that system. Some of the department's objectives are: efficiency, safety maximum productivity, accessible and equitable services, cost recovery, and support of government policies and objectives, especially as they relate to social and economic development.

Treasury Board of Canada

L'Esplanade Laurier
140 O'Connor Street
Ottawa, Ontario
K1A 0R5

Information: Ottawa/Hull (613) 957-2400.

The Board's responsibilities include administrative policy, organization of the public service, financial management, personnel management and expenditure management. The 1988 Official Languages Act invests the Treasury Board with responsibility for the general direction and co-ordination of the Official Languages' policy and programs of the government in federal institutions. The Treasury Board Secretariat serves as the employer for negotiating federal public service collective agreements under the Public Service Staff Relations Act. It sets policy in the areas of these specific responsibilities and examines and approves the proposed spending plans of government departments.

Veterans Affairs

Head office
Daniel J. MacDonald Building
161 Grafton Street
PO Box 7700
Charlottetown, Prince Edward Island
C1A 8M9

Field Operations Branch East Memorial
Building, 5th Floor 284 Wellington Street
Ottawa, Ontario K1A 0P4

Information: Charlottetown (902) 566-8457; Ottawa/Hull (613) 995-6467.

The Department of Veterans Affairs provides support for the economic, social, mental and physical well-being of veterans, certain civilians and their dependents.

The Veterans Portfolio is composed of the Department of Veterans Affairs and three associated agencies: the Bureau of Pensions Advocates, the Canadian Pension Commission and the Veterans Appeal Board.

Bureau of Pensions Advocates

Head office
Daniel J. MacDonald Building, 2nd Floor
161 Grafton Street
PO Box 7700
Charlottetown, Prince Edward Island
C1A 8M9

District offices: Victoria, Vancouver, Penticton, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, North Bay, London, Hamilton, Toronto, Kingston, Ottawa, Montreal, Quebec, Saint John, Halifax, Charlottetown, St. John's.

Information: Charlottetown (902) 566-8640.

Legal assistance: the Bureau provides free legal service to applicants and pensioners in accordance with the Pension Act and allied statutes and orders. This service includes the counselling of applicants and the preparation and presentation of claims to adjudicating bodies, the Canadian Pension Commission, and the Veterans Appeal Board.

Canadian Pension Commission

Head office
Daniel J. MacDonald Building, 2nd Floor
PO Box 9900
Charlottetown, Prince Edward Island
C1A 8V6

District offices: provincial capitals (except Fredericton) as well as Vancouver, Calgary, Saskatoon, Hamilton, London, Peterborough, Kingston, North Bay, Ottawa, Montreal, Saint John.

Information: Charlottetown (902) 566-8809 or nearest district office.

The Commission has responsibility for veterans' pensions as compensation for disability or death related to military service and as compensation to former prisoners of war.

Veterans Appeal Board

Head office
Daniel J. MacDonald Building, Ground Floor
161 Grafton Street
PO Box 7700
Charlottetown, Prince Edward Island
C1A 8M9

Information: Charlottetown (902) 566-8620.

The Board provides a system of appeals, to ex-members of the armed forces, the Royal Canadian Mounted Police, certain civilians and/or their dependents, for decisions rendered by the Entitlement and/or Assessment Boards of the Canadian Pension Commission and rulings made by the Department of Veterans Affairs under the Pension Act, the Civilian War Pensions and Allowances Act, the War Veterans Allowance Act and other related statutes. The Board also interprets the legislation and is the final appeal level within Veterans Affairs.

Commonwealth War Graves Commission Canadian Agency

East Memorial Building, 1st Floor
284 Wellington Street
Ottawa, Ontario
K1A 0P4

Information: Ottawa/Hull (613) 992-3224.

The Commission's duties are to mark and maintain the graves of members of the Commonwealth forces who died in the two World Wars, to build memorials to those whose graves are unknown, and to keep records and registers. The Canadian agency carries out these duties in North America. It also provides information to the public on the location of Commonwealth war graves and memorials throughout the world.

Western Economic Diversification

Head office
Suite 1500
Canada Place
9700 Jasper Avenue
Edmonton, Alberta
T5J 4H7

Regional offices: British Columbia, Alberta, Saskatchewan, Manitoba.

Information: Edmonton (403) 495-4164.

The Department of Western Economic Diversification Canada is responsible for promoting the diversification of the Western Canadian economy and for advancing the West's interests in national economic policy. The Western Diversification program helps Western Canadian business develop new products, new markets, new technology, import replacements and improved industry-wide productivity.

Yukon Territory Water Board

Suite 302
4114 Fourth Avenue
Whitehorse, Yukon
Y1A 4N7

Information: Yukon (403) 668-4884.

Under the authority of the Northern Inland Waters Act, the Board regulates the use of water in the Yukon Territory through the issuance of Water Use Licences. The objects of the Board are to provide for the conservation, development, and utilization of the water resources in a manner that will provide the optimum benefit for all Canadians and the residents of the Yukon Territory in particular.

Appendix B

STATISTICS CANADA REGIONAL OFFICES

- **Newfoundland and Labrador**
  Advisory Services
  Statistics Canada
  3rd Floor
  Viking Building
  Crosbie Road
  St. John's, Newfoundland
  A1B 3P2
  Local calls: 772-4073
  Toll free service: 1-800-563-4255

- **Maritime provinces**
  Advisory Services
  Statistics Canada
  North American Life Centre
  1770 Market Street
  Halifax, Nova Scotia
  B3J 3M3
  Local calls: 426-5331
  Toll free service: 1-800-565-7192

- **Quebec**
  Advisory Services
  Statistics Canada
  Guy Favreau Complex
  200 René Lévesque Blvd. W.
  East Tower, Room 412
  Montreal, Quebec
  H2Z 1X4
  Local calls: 283-5725
  Toll free service: 1-800-361-2831

- **National Capital Region**
  Statistical Reference
  Centre (N.C.R.)
  Statistics Canada
  Lobby, R.H. Coats Building
  Tunney's Pasture
  Ottawa, Ontario
  K1A 0T6
  Local calls: 951-8116
  If outside the local calling
  area, please dial the toll free
  number for your province

- **Ontario**
  Advisory Services
  Statistics Canada
  10th Floor
  Arthur Meighen Building
  25 St. Clair Avenue East
  Toronto, Ontario
  M4T 1M4
  Local calls: 973-6586
  Toll free service: 1-800-263-1136

- **Manitoba**
  Advisory Services
  Statistics Canada
  6th Floor
  General Post Office Building
  266 Graham Avenue
  Winnipeg, Manitoba
  R3C 0K4
  Local calls: 983-4020
  Toll free service: 1-800-542-3404

- **Saskatchewan**
  Advisory Services
  Statistics Canada
  9th Floor, Avord Tower
  2002 Victoria Avenue
  Regina, Saskatchewan
  S4P 0R7
  Local calls: 780-5405
  Toll free service: 1-800-667-7164

- **Alberta and Northwest Territories**
  Advisory Services
  Statistics Canada
  Park Square, 8th Floor
  10001 Bellamy Hill
  Edmonton, Alberta
  T5J 3B6
  Local calls: 495-3027
  Toll free service: 1-800-282-3907
  NWT — Call collect (403)495-3028

- **Southern Alberta (Calgary)**
  Advisory Services
  Statistics Canada
  Room #401, First Street Plaza
  138 – 4th Avenue S.E.
  Calgary, Alberta
  T2G 4Z6
  Local calls: 292-6717
  Toll free service: 1-800-472-9708

- **British Columbia and the Yukon**
  Advisory Services
  Statistics Canada
  3rd Floor
  Federal Building, Sinclair Centre
  757 West Hastings Street
  Suite 440F
  Vancouver, British Columbia
  V6C 3C9
  Local calls: 666-3691
  Toll free service (except Atlin, BC)
  1-800-663-1551
  Yukon and Atlin BC: Zenith 08913

Appendix C

METRIC CONVERSION

In view of the degree of metric conversion in Canada almost all quantities in this edition of the *Canada Year Book* appear only in SI metric or in neutral units such as dollars or dozens.

Following are conversion factors for units used in the present edition and some others in common use. Conversions are from SI metric to traditional units. The same number of significant digits is used in these conversion factors as in the *Canadian Metric Practice Guide*. If users do not need this level of accuracy, they can round off figures at any number of digits, either in the calculations or in the results. It is a requirement in SI metric to use spaces instead of commas to separate groups of three digits; a space is optional with a four-digit number. Although this practice is not imperative with neutral units, it is taking place in many cases now and will undoubtedly come about generally through standardization. In all Statistics Canada publications, a period is used as a decimal marker.

Relative weights and measures:
SI Metric, Canadian Imperial and United States units

Area		
1 km^2 (square kilometre)	=	0.3861022 square miles
1 ha (hectare)	=	2.471054 acres
	=	10 000 m^2
100 ha	=	1 km^2
Length		
1 m (metre)	=	39.37 inches
	=	3.281 feet
	=	1.094 yards
1 km (kilometre)	=	0.6213712 statute miles = 3,280.840 feet
	=	0.5399568 nautical miles = 3,282.937 feet
Volume and capacity		
1 dm^3 (cubic decimetre)	=	0.0353147 cubic feet
	=	0.4237760 board feet (for lumber)
	=	0.0274962 bushels (for grain)
	=	1 L (litre) (for liquids or, in some cases, for fine solids which pour)
	=	0.2199693 Canadian gallons
	=	35.1951 fluid ounces
	=	0.8798774 quarts
	=	1.75975 pints
	=	0.264172 US gallons
	=	1.05669 US quarts
	=	2.11338 US pints
1 imperial proof gallon	=	1.36 US proof gallons
1 m^3 (cubic metre)	=	6.289811 barrels (petroleum or other liquid)
	=	0.3531466 register tons (in shipping)*
	=	35.31466 cubic feet
	=	1 000 dm^3

Mass (weight)

1 g (gram) = 0.03527396 ounces (avoirdupois)
= 0.03215075 ounces (troy or apothecary)
1 kg (kilogram) = 2.20462262 pounds (avoirdupois)
1 t (metric tonne) = 1.10231131 tons (short)
= 0.98420653 tons (long)
(For register ton, see Volume and capacity, and footnote *)

Length and mass

1 t.km (tonne kilometre) = 0.6849446 short ton miles

Volume and mass

1 m^3 of water weighs 1 tonne

Temperature

Fahrenheit temperature = 1.8 (Celsius temperature) + 32
Celsius temperature = 5/9 (Fahrenheit temperature −32)
At sea level water freezes at 0°C (32°F) and boils at 100°C (212°F)

The following weights and measures are used in connection with the principal field crops and fruits:

Crops	Pounds per bushel	Kilograms per bushel	Bushels per 1 000 kg (1 t)
Wheat, potatoes and peas	60	27.215 5	36.7437
Wheat flour	43.48	19.721 4	50.7063
Oats	34	15.422 1	64.8418
Barley and buckwheat	48	21.772 4	45.9296
Rye, flaxseed and corn	56	25.401 2	39.3682
Mixed grains	45	20.411 7	48.9916
Rapeseed, mustard seed, pears, plums, cherries, peaches and apricots	50	22.679 6	44.0925
Sunflower seed	24	10.886 2	91.8593
Apples	42	19.050 9	52.4910

Strawberries and raspberries 1 kg = 1.47 quarts in BC
= 1.76 quarts in all other provinces

To produce 100 kg of flour it takes 138 kg of wheat.

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*Gross register tonnage of a ship, as used by Lloyd's Register of Shipping, is a measurement of the total capacity of the ship and is not a measure of weight. Net register tonnage equals gross register tonnage minus space used for accommodation, machinery, engine area and fuel storage, and so states the cargocarrying ability of the ship.

Appendix D

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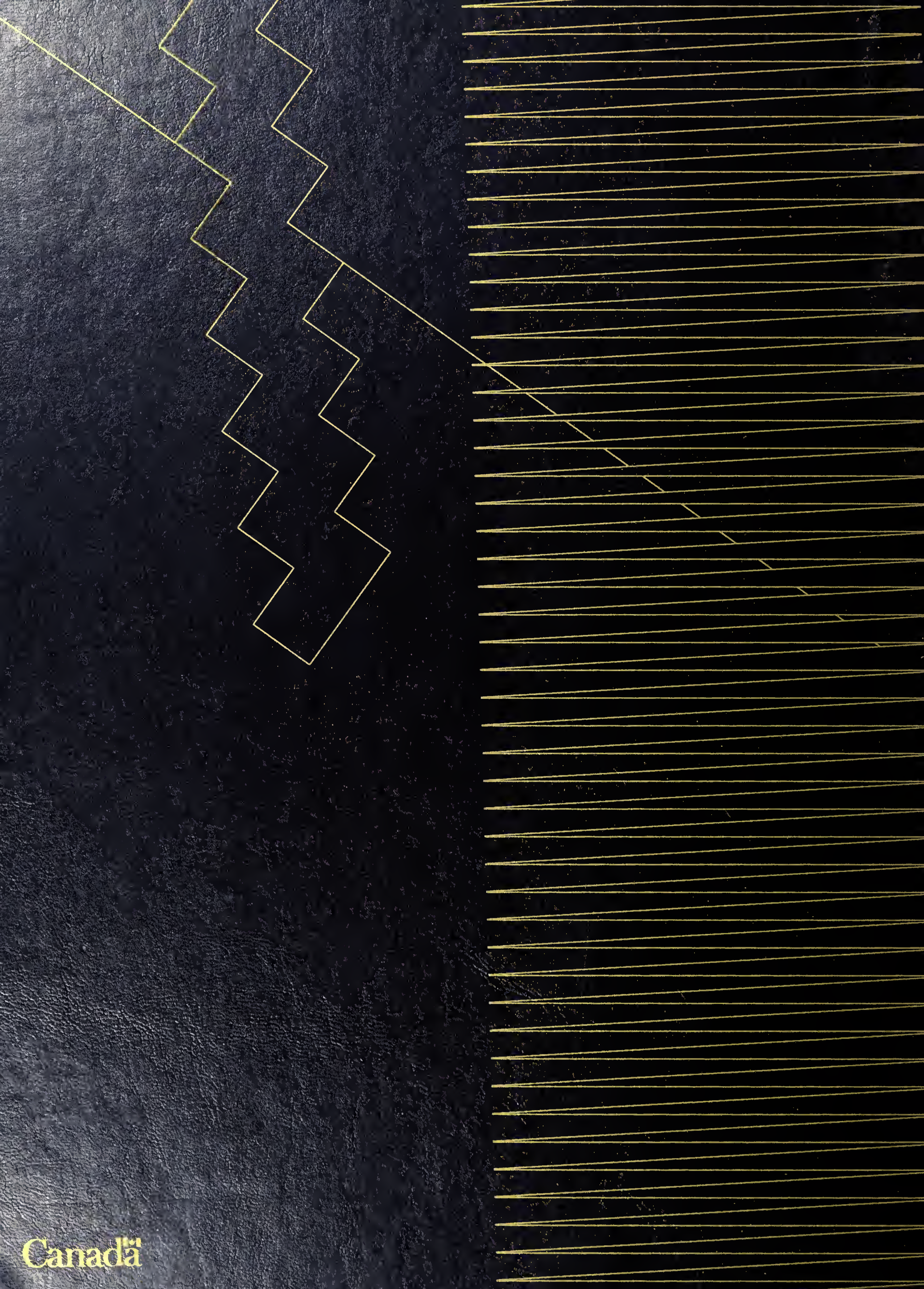

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